Eagle® 3000 Patient Monitor
Data Manual

marquette
Medical Systems

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Manual Information

Revision History

Each page of this manual has a revision letter, located at the bottom of the page, that identifies the manual's update level. This may be important if you have different updates to a manual and don't know which is the most current.

For the initial release, the manual has the revision letter A. For the first update of the manual, the manual receives the revision letter B, and so on. The table below indicates the revision history of this manual.

Table 1-1. Revision History

Revision	Title	Manual PN	Date	Comment
A	Eagle 3000 Patient Monitor Data Manual	415397-038	21 April 1997	Initial release of this manual.

Manual Purpose

This manual is a supplement to the field service manual, *Eagle 3000 Patient Monitor Field Service Manual*, PN 415397-003. If you need equipment overview, maintenance, troubleshooting, calibration, configuration or upper level assembly information, order the field service manual.

This manual supplies detailed technical information for service representatives and technical personnel so they may troubleshoot the equipment to a circuit board or component level.

Users of this manual are expected to have a strong background in electronics, including analog and digital circuity with microprocessor and micro-controller architecture.

Chapter Content

This manual is organized into five chapters, summarized as follows:

Introduction

Chapter one describes the service manual and chapter contents and provides general information on safety, service requirements, equipment symbols, and serial number identification.

Upper Level Overview

Chapter two gives the upper level model part numbers and presents the upper assembly interconnection diagram and signal names. Information regarding the main processor PCB, pn 800772-002, can also be found in chapter two.

Circuit Board Assembly Chapters

Each of the subsequent chapters describe a circuit board or assembly that may include any or all of the following:

- General information
- List of switches and controls
- List of input and output connector signals
- Exploded view or parts location diagram
- Parts list
- Schematic diagram
- Updated data describing revisions to the circuit boards and major assemblies, if applicable

Power Supply

Chapter three provides all information available for the power supply assembly, pn 414641-001, and for the power supply PCB, pn 800706-001.

Eagle 3000 Options PCB

Chapter four provides all information available for the Eagle 3000 option assemblies, pn 416021-001 and -002, as well as information for the Eagle 3000 option PCBs, pn 800836-002, 800862-001, and 801318-001.

Acquisition Processor PCB

Chapter five provides all information available for the acquisition processor (DAS) assembly, pn 414887-001, and for the acquisition processor PCB, pn 800776-001.

Related Manuals

Check these documents if you need additional information on the Marquette Monitoring system.

Table 1-2. Service Documents

Part Number	Name
415397-003	Eagle 3000 Patient Monitor Field Service Manual
405040-088	Centralscope 12 Central Station Service Manual
405040-018	Centralscope 12C Central Station Service Manual
405040-164	Centralscope Central Station Field Service Manual

Table 1-3. Operator Documents

Part Number	Name
415397-042	Eagle 3000 Monitor Operator's Manual (for software version 3)
415397-043	Eagle 3000 Monitor Instructions (for software version 3)

Tech Memos

Marquette Service issues technical memos that aid service personnel in servicing and maintaining the equipment. Tech Memos supply important information about changes to the equipment, typical problems, and how to solve those problems. Tech Memos are also written to describe hardware and software upgrades.

Tech Memos are automatically distributed to all Marquette Field Service personnel, and are available to customers by subscription. Contact Technical Support for more information or to subscribe. For the address or telephone number, see the "How to Reach Us..." pages presented later in this manual.

BBS Tech Memo Service

Designed primarily for biomedical technicians, the BBS Tech Memo Service provides "instant" on-line access to the latest Marquette maintenance and repair information. Subscribers with an IBM or IBM-compatible computer and modem can link-up to the MEITIS system and download technical publications as well as send and receive messages from technical support representatives. Call Service Contracts at 800-552-3248 for subscription information.

Safety Information

Responsibility of the Manufacturer

Marquette Medical Systems is responsible for the effects of safety, reliability, and performance only if:

- Assembly operations, extensions, readjustments, modifications, or repairs are carried out by persons authorized by Marquette.
- The electrical installation of the relevant room complies with the requirements of the appropriate regulations.
- The equipment is used in accordance with the instructions for use.

Intended Use

This device is intended for use under the direct supervision of a licensed health care practitioner.

To ensure patient safety, use only parts and accessories manufactured or recommended by Marquette Medical Systems.

Contact Marquette Medical Systems for information before connecting any devices to this equipment that are not recommended in this manual.

Equipment Symbols

The following symbols appear on the equipment.

NOTE: Some symbols may not appear on all equipment.

ATTENTION: Consult accompanying documents before using the equipment.

In Europe, this symbol means dangerous or high voltage. In the United States, this symbol represents the caution notice below:

CAUTION
To reduce the risk of electric shock, do NOT remove cover (or back). Refer servicing to qualified personnel.

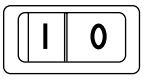
Defibrillator-proof type CF equipment; type CF equipment is specifically designed for applications where a conductive connection directly to the heart is established. The paddles indicate the equipment is defibrillator proof.

Defibrillator-proof type BF equipment; type BF equipment is suitable for intentional external and internal application to the patient, excluding direct cardiac application. Type BF equipment is type B equipment with an F-type isolated (floating) part. The paddles indicate the equipment is defibrillator proof.

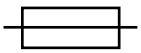
Type B equipment; type B equipment is suitable for intentional external and internal application to the patient, excluding direct cardiac application.

Equipotentiality

Alternating current (AC)



Power; **I** = ON; **O** = OFF



Fuse

Indicates where to press to open the door on the Series 7160 Direct Digital Writer.

Notes, Cautions, and Warnings

Notes, cautions, and warnings are used in this manual to provide additional information to service personnel.

NOTE
A note conveys special instructions to service personnel to highlight an operating procedure, practice, etc. Notes may precede or follow the applicable text, depending on the material to be highlighted.

CAUTION
The purpose of a caution is to inform service personnel of an operating procedure, practice, etc., which if not strictly observed, could result in possible damage to the equipment. Cautions always precede the applicable text.

WARNING
A warning provides instructions to service personnel that if an operating procedure, practice, etc., is not followed, personal injury may result. Warnings always precede the applicable text.

Service Information

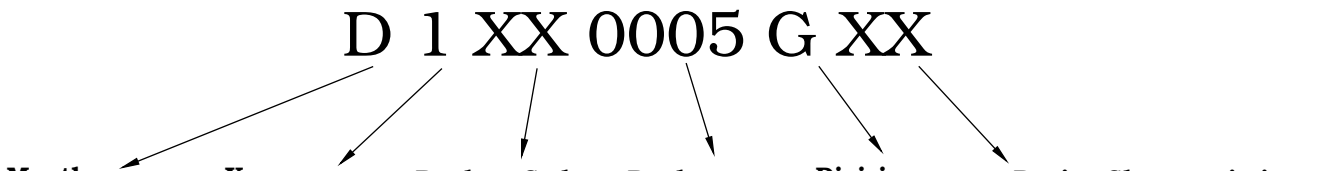
Service Requirements

Follow the service requirements listed below.

- Refer equipment servicing to Marquette's authorized service personnel only.
- Any unauthorized attempt to repair equipment under warranty voids that warranty.
- It is the user's responsibility to report the need for service to Marquette Medical Systems or to one of their authorized agents.
- Failure on the part of the responsible individual, hospital, or institution using this equipment to implement a satisfactory maintenance schedule may cause undue equipment failure and possible health hazards.
- Regular maintenance, irrespective of usage, is essential to ensure that the equipment will always be functional when required.

Equipment Identification

Every Marquette Medical Systems device has a unique serial number for identification. The serial number appears on the product label on the base of each unit under the Trim knob control.



Month Manufactured
A = January
B = February
C = March
D = April
E = May
F = June
G = July
H = August
J = September
K = October
L = November
M = December

Year Manufactured
1 = 1991
2 = 1992
3 = 1993
(and so on)

Product Code
Two-character product descriptor

Product Sequence Number
Manufacturing number (of total units manufactured.)

Division
F = Cardiology
G = Monitoring

Device Characteristics
One or 2 letters that further describe the unit, for example:
P = prototype not conforming to marketing specification
R = refurbished equipment
S = special product documented under Specials part numbers
U = upgraded unit

Warranty

1 year.

How to Reach Us…

The following are telephone numbers and addresses for contacting various Marquette Medical Systems Service and Supplies Division personnel.

Ordering Supply Items

Supply items are generally items used during normal operation of a product. Leadwires, electrode paste, patient cables, and printer paper are examples of supply items.

Make telephone inquiries about supply items at:

1-800-558-5102 (U.S. only)

1-561-575-5000 (outside the U.S.)

Address orders or inquiries to:

Marquette Medical Systems Service and Supplies
P.O. Box 9100
100 Marquette Drive
Jupiter, FL 33468-9100
Attn: Supplies

Ordering Service Parts

Service parts are items that are not expended in the normal operation of the product. They are generally replacements for defective or malfunctioning items inside the product. Service parts include PCB assemblies, electronic components, internal cables and harnesses, software or firmware, and operator and service manuals. When ordering additional operator manuals, remember to notate the software version from the start-up screen.

A part number for the item to be replaced is necessary for ordering a service part. If the part number for the desired item is unobtainable, the following will be necessary to order the item:

- model and serial number of the equipment,
- part number/name of the assembly where the item is used,
- item name, and
- where applicable, reference designation (eg, R13, S12, U32).

Service Calls

To open a service call with Marquette Medical Systems Service, contact a Service Dispatcher at:

1-800-558-7044 (U.S. only)

1-561-575-5000 (outside the U.S.)

Service Contracts

For any questions about Service Contracts, contact the service contract operator at:

1-800-552-3248

Technical Support

Technical Support has the most current information about your equipment and can provide assistance with any technical questions or problems.

For All Hardware

For technical advice concerning any equipment in your Marquette Medical Systems monitoring system, contact Tech Support—Monitoring Hardware at:

1-800-558-7822

Telemetry

For technical advice concerning your Telemetry system, contact Tech Support—Telemetry at:

1-800-552-3243

Series 7000/7010

For technical advice concerning Series 7000/7010 patient monitoring equipment, contact Tech Support:

1-800-443-0980

48-Hour Turnaround Repair

Some Marquette products (Input Modules, Tram modules, Series 7700 ECG Telemetry Transmitters, and CD Telemetry Transmitters) are repaired on a 48-hour turnaround basis.

To inquire about status of 48-hour turnaround repair items, or if you have questions before shipping an assembly to be repaired, call:

1-800-552-3243

Service Address

Send items for 48-hour repair and all monitoring repair items to:

Marquette Medical Systems Service and Supplies
P.O. Box 9100
100 Marquette Drive
Jupiter, FL 33468-9100
Attn: Monitoring Repair

For Additional Information

The main switchboard operator will direct your call to the person most able to assist you. For any other questions or problems, contact the main switchboard operator at:

1-800-558-5120

Abbreviations

	A
A	ampere
Ampl	amplifier
Ave	Avenue
	B
BDGH	binding head
Btu/hr	British thermal units per hour
	C
CA	California
Cap	capacitor
CMOS	complimentary metal-oxide semiconductor
Comp	composition
	D
DC, dc	direct current
	E
eg	for example
EPROM	electronically programmable read only memory
ESD	electrostatic discharge
etc	et cetera, and so forth
	F
FL	Florida
	G
g	gram
	I
in	inch
Inc	incorporated
	K
K	kilo, kilohm
	L
lb	pound
LED	light-emitting diode
	M
mA	milliampere
MHz	megahertz
mm	millimeter
mmHg	millimeter of mercury
MOSFET	metal-oxide semiconductor field-effect transistor
MPE	metallized polycarbonate epitaxial
MPP	metallized polypropylene
	N
No	number
	O
oz	ounce
	P
PA	pulmonary artery
PC	printed circuit, personal computer
PCB	printed circuit board
pF	picofarad
PLCC	plastic leaded chip carrier
PNH	pan head
	Q
Qty	quantity
	R
RAM	random access memory
Res	resistor
ROM	read-only memory
	S
SM	surface mount
SST	stainless steel
SvO_2	mixed venous oxygen saturation
	T
Tant	tantalum
TTL	transistor-transistor logic
	V
V	volt, voltage
	W
W	watt, West
w/	with
WI	Wisconsin
WW	wire wound
	Other
→	continued
<	less than
≤	less than or equal to
µF	microfarad
µH	microhenry
Ω	ohm
%	percent

For your notes

2 UPPER LEVEL OVERVIEW

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Upper Level Part Numbers

Use Field Service Manual First

It is recommended that you first familiarize yourself with the information presented in the Troubleshooting section of the *Eagle 3000 Patient Monitor Field Service Manual*, pn 415397-003. The troubleshooting information will help you narrow service problems down to one of the replaceable assemblies.

After you have determined which assembly requires replacement, use the input/output connector list, parts location diagram, parts list, and/or schematic diagram presented in this manual to repair the assembly.

Also refer to the *Eagle 3000 Patient Monitor Field Service Manual*, pn 415397-003, for preventative maintenance, calibration, and configuration procedures.

Model Numbers

The following model part numbers are discussed in this manual for the Eagle 3000 patient monitor.

Table 2-1. Model Part Numbers

Model	Part Number
Eagle 3000 Patient Monitor	414888-001 414888-002 414888-003 414888-004 414888-005

Circuit Board Part Numbers

The various model parameters of the Eagle 3000 patient monitor are listed in the table below. Refer to your Eagle 3000 model number for the correct replacement part numbers.

Table 2-2. List of Options

Model PN	NBP	Writer	ETCO2	Defib Sync/ Remote Alarm
414888-001	X	–	–	–
414888-002	X	–	–	X
414888-003	X	–	X	X
414888-004	X	X	–	X
414888-005	X	X	X	X

In addition to the main processor PCB, pn 800772-002, the table below lists the other assemblies and circuit boards described in this manual.

Table 2-3. Assemblies and Circuit Boards

Item	Part Number
Power Supply Assembly	414641-001
Power Supply PCB	800706-001
Option Assemblies	416021-001 416021-002 418394-001 418394-002
Defib Sync/Remote Alarm PCB[1]	800836-002 801813-001
ETCO2 PCB	800862-001
Data Acquisition Assembly	414887-001
Data Acquisition PCB	800776-001

[1]There are two PCBs for the defib sync/remote alarm assembly. PN 800836-002 is used on older Eagle 3000 monitors that have the 1/4-inch phone jack type connector for remote alarm. PN 801813-001 is used for new Eagle 3000 monitors, which have a 9-pin subminiature “D” connector for remote alarm. Refer to chapter 4 for more information about the option assemblies.

NOTE
The exploded view and parts lists for the upper level assembly, pn 414888-001J through -005F, on the following pages show the new, 9-pin “D” connector. For information about the old, 1/4-inch phone jack type connector, please refer to chapter 4.

Exploded View PN 414888-001J/002J/003F/004J/005F

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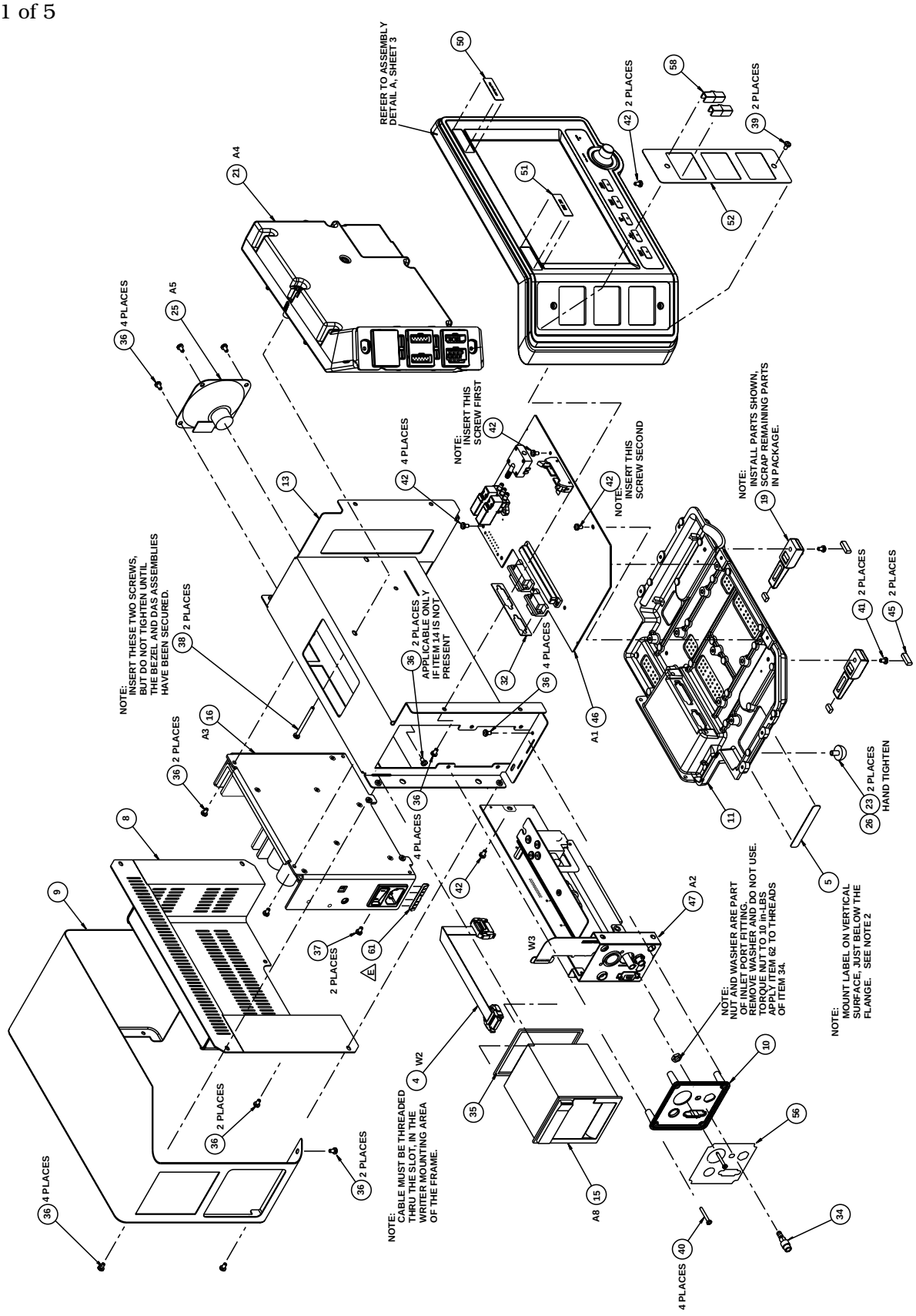
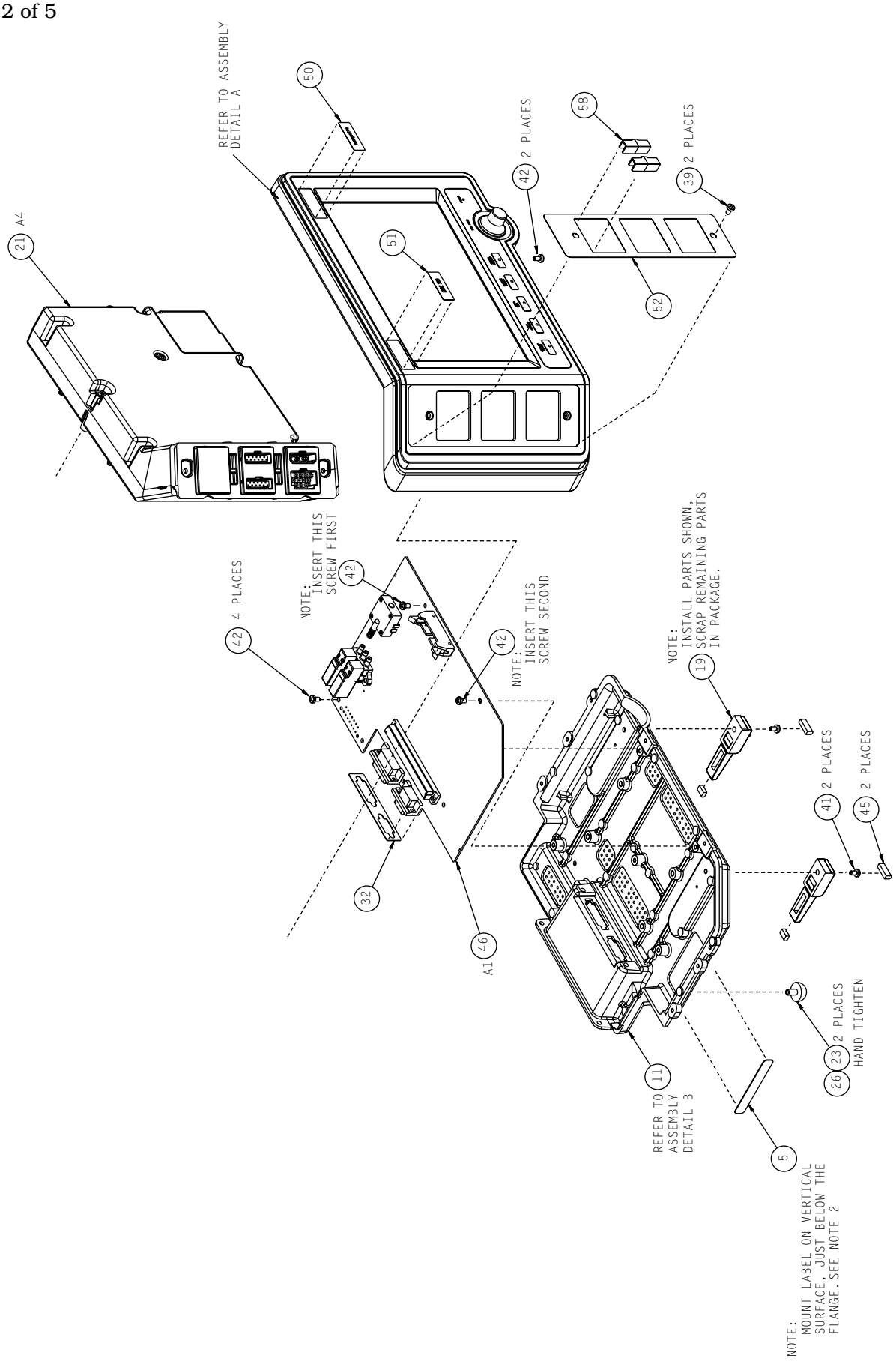

REFER TO ASSEMBLY DETAIL A, SHEET 3
2 PLACES
2 PLACES
A4
A5
4 PLACES
NOTE: INSERT THIS SCREW FIRST
NOTE: INSERT THIS SCREW SECOND
4 PLACES
NOTE: INSTALL PARTS SHOWN, SCRAP REMAINING PARTS IN PACKAGE.
2 PLACES
2 PLACES
NOTE: INSERT THESE TWO SCREWS, BUT DO NOT TIGHTEN UNTIL THE BEZEL AND DAS ASSEMBLIES HAVE BEEN SECURED.
2 PLACES
2 PLACES APPLICABLE ONLY IF ITEM 14 IS NOT PRESENT
4 PLACES
A3
A1
2 PLACES
2 PLACES HAND TIGHTEN
4 PLACES
A2
W3
2 PLACES
NOTE: NUT AND WASHER ARE PART OF INLET PORT FITTING. REMOVE WASHER AND DO NOT USE. TORQUE NUT TO 10 in-LBS APPLY ITEM 62 TO THREADS OF ITEM 34.
NOTE: MOUNT LABEL ON VERTICAL SURFACE, JUST BELOW THE FLANGE. SEE NOTE 2
W2
2 PLACES
2 PLACES
NOTE: CABLE MUST BE THREADED THRU THE SLOT, IN THE WRITER MOUNTING AREA OF THE FRAME.
A8
4 PLACES
4 PLACES


REFER TO ASSEMBLY DETAIL A
50
58
42 2 PLACES
39 2 PLACES
21 A4
51
52
NOTE: INSERT THIS SCREW FIRST
42 4 PLACES
42
NOTE: INSERT THIS SCREW SECOND
42
NOTE: INSTALL PARTS SHOWN. SCRAP REMAINING PARTS IN PACKAGE.
19
41 2 PLACES
45 2 PLACES
32
46 A1
REFER TO ASSEMBLY DETAIL B
11
23 2 PLACES HAND TIGHTEN
26
5
NOTE: MOUNT LABEL ON VERTICAL SURFACE, JUST BELOW THE FLANGE. SEE NOTE 2

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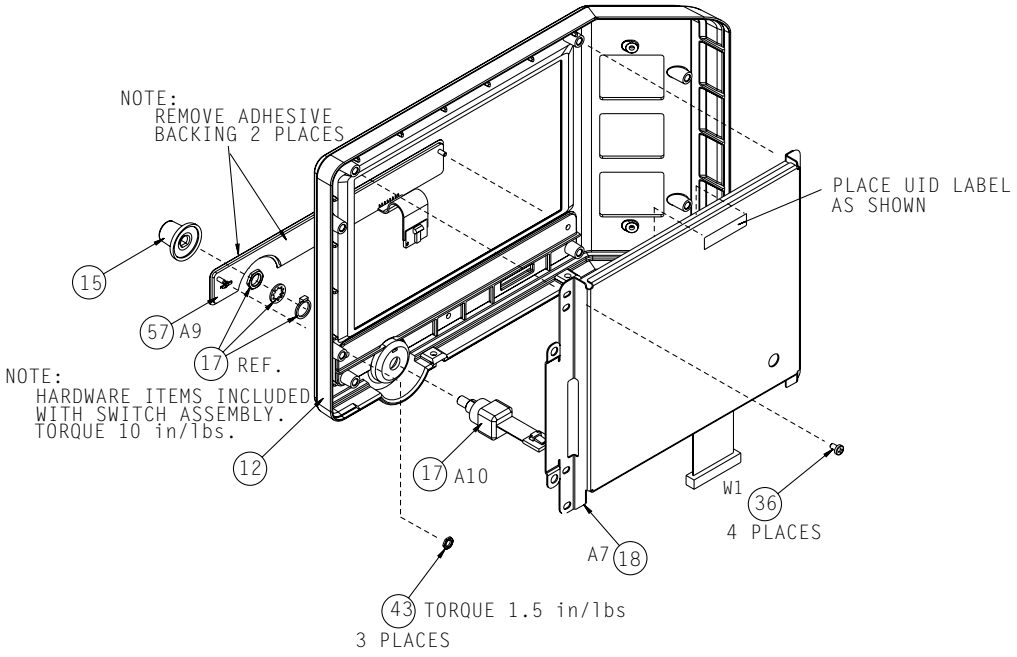
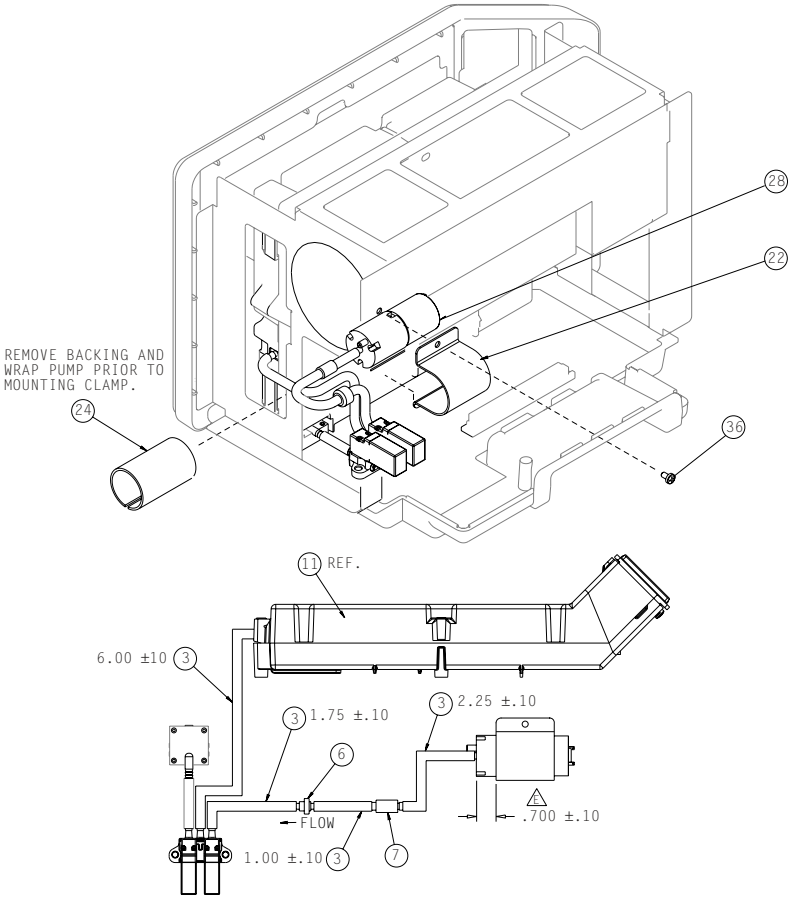


ASSEMBLY DETAIL A



ASSEMBLY DETAIL B

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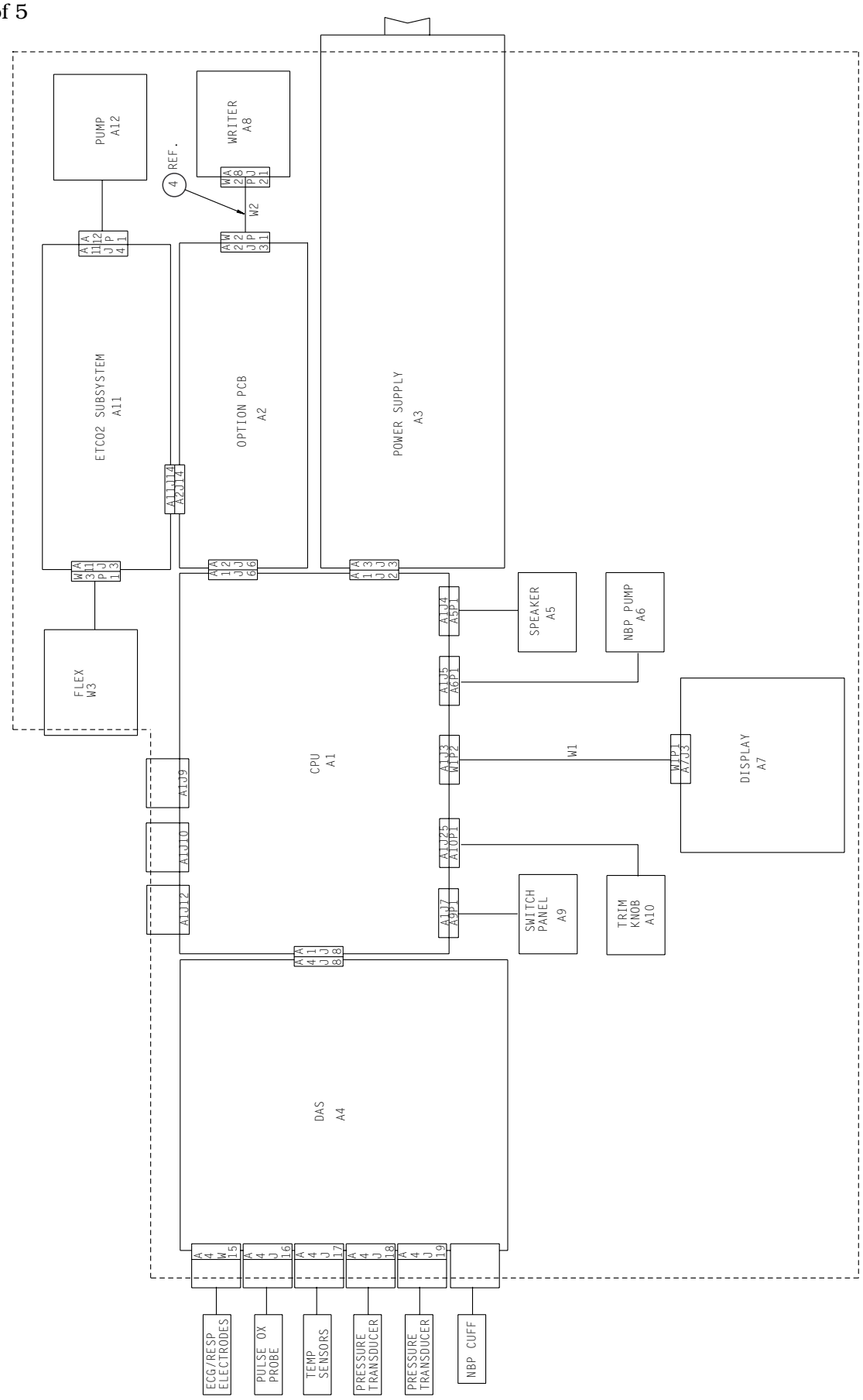
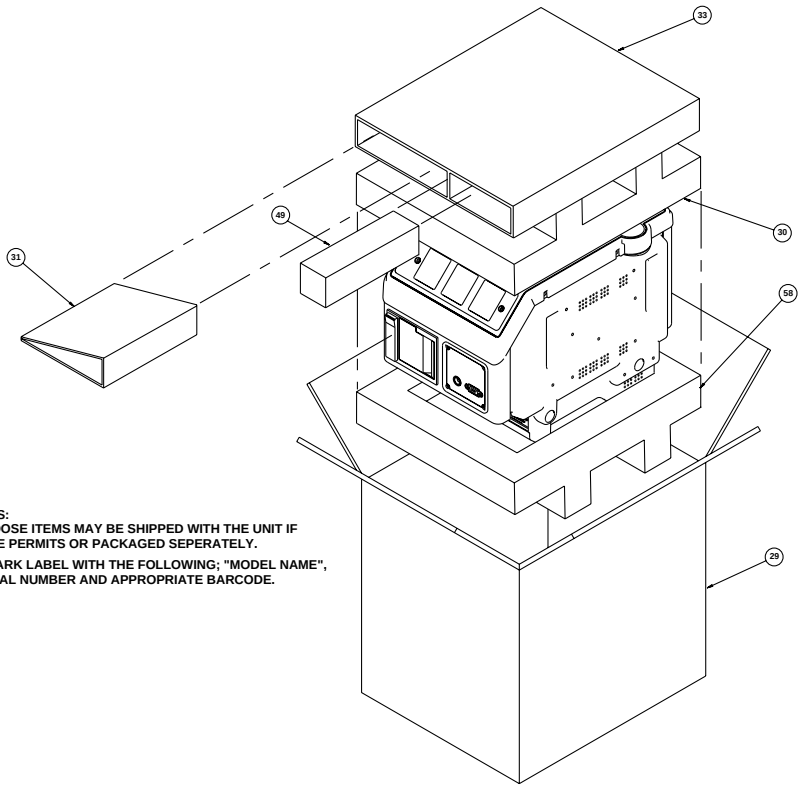
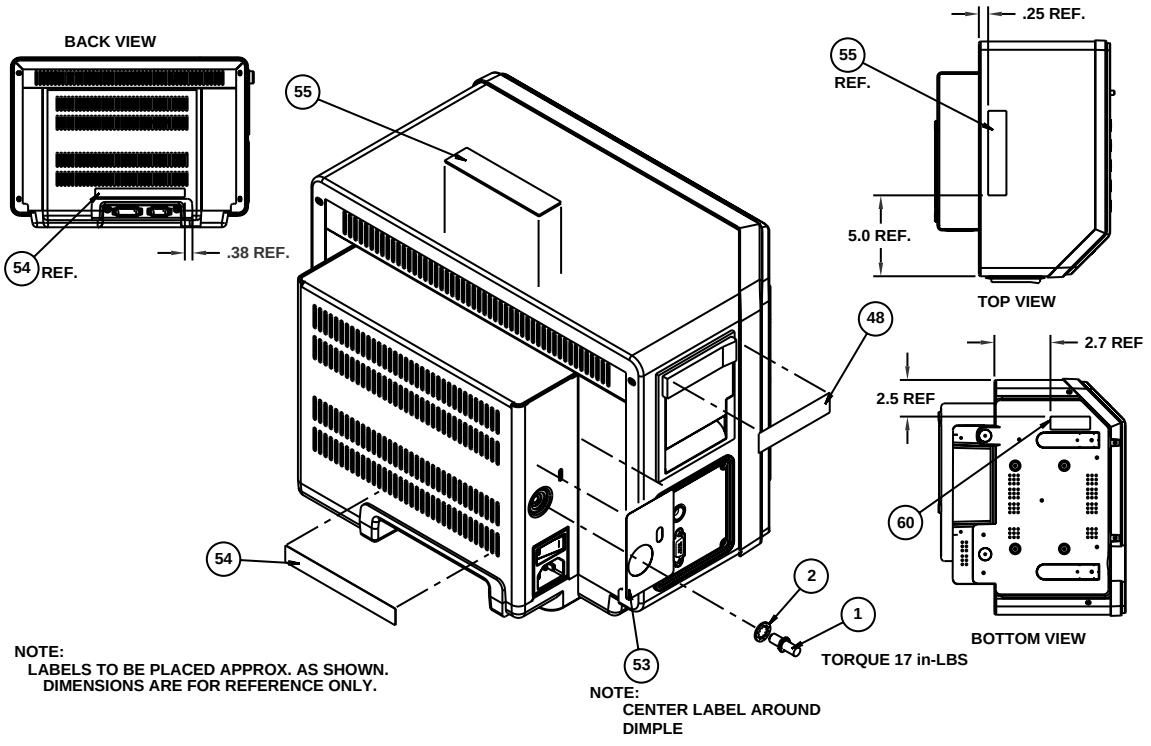

PUMP
A12
WRITER
A8
4 REF.
W2
ETCO2 SUBSYSTEM
A11
OPTION PCB
A2
POWER SUPPLY
A3
FLEX
W3
CPU
A1
SPEAKER
A5
NBP PUMP
A6
DISPLAY
A7
W1
SWITCH
PANEL
A9
TRIM
KNOB
A10
DAS
A4
ECG/RESP
ELECTRODES
PULSE OX
PROBE
TEMP
SENSORS
PRESSURE
TRANSDUCER
PRESSURE
TRANSDUCER
NBP CUFF



NOTES:
1) LOOSE ITEMS MAY BE SHIPPED WITH THE UNIT IF SPACE PERMITS OR PACKAGED SEPERATELY.
2) MARK LABEL WITH THE FOLLOWING; "MODEL NAME", SERIAL NUMBER AND APPROPRIATE BARCODE.



NOTE:
LABELS TO BE PLACED APPROX. AS SHOWN.
DIMENSIONS ARE FOR REFERENCE ONLY.

NOTE:
CENTER LABEL AROUND DIMPLE

Parts List PN 414888-001J/002J/003F/004J/005F

Item	Reference Designation	Parts List	Part Number	Qty
1		Plug, MC, Equipotential	400040-001	1
2		Washer, Lock, Serrated, Male/Female, No 6	400041-001	1
3		Tubing, Silastic	401582-001	AR
4	W2	Harness Assembly, Writer Data	402642-007	1
5		Label, Model/Serial Number	404525-006	1
6		Check Valve, 0.125 inch	418437-001	1
7		Filter, 43 Micron	404679-001	1
8		Rear Cover	412847-001	1
9		Top Cover (For 414888-001 Only) Top Cover (For 414888-002 and -003 Only) Top Cover (For 414888-004 and -005 Only)	412848-003 412848-002 412848-001	1 1 1
10		Side Connector Cover (For 414888-002 and -004 Only) Side Connector Cover, ETCO2 (For 414888-003 and -005 Only)	412849-002 412849-003	1 1
11		Base, Diecast	412857-002	1
12		Bezel, Monitor	412858-001	1
13		Chassis Frame	412868-003	1
14	A8	Thermal Writer Assembly, 2-inch, STAR (For 414888-004 and -005 Only)	413568-001	1
15		Knob, Trim Knob, Soft	414622-001	1
16	A3	Power Supply Assembly, 5/12 Volt	414641-001	1
17	A10	Switch Assembly, Rotary	414642-001	1
18	A7	Display Processor PCB Assembly	414704-002	1
19		Foot, Two-Position	414793-001	1
20		Not used in this assembly		
21	A4	Data Acquisition PCB Assembly	414887-001	1
22		Clamp, NBP Pump	414992-002	1
23		Foot, Rubber, 0.62 diameter	415054-002	2
24		Foam Pump Mount	415081-001	1
25	A5	Speaker Assembly	415091-001	1
26		Cement, Loctite	4851-003	AR
27		Not used in this assembly		
28	A6	NBP Pump Assembly	415321-001	1
29		Carton, Shipping, Eagle 3000	415337-001	1
30		Insert, Foam, Glued, Top Section	415338-001	1
31		Eagle 3000 Field Service Manual	415397-003	AR
32		Gasket, EMI Shield	415478-002	1
33		Insert Spacer, Packaging	415582-001	1
34		Connector, Luer, Female, 1/8 Barb	416229-001	1
35		Gasket, Writer	415650-001	1
36		Screw, PNH, Phillips, 6-32 x 1/4	45000-604	29

Item	Reference Designation	Parts List	Part Number	Qty
37		Screw, PNH, Phillips, 6-32 x 3/8	45000-606	2
38		Screw, PNH, Phillips, 6-32 x 1-1/2	45000-817	2
39		Screw, PNH, Phillips, SST, 4-40 x 3/8	4502-412	2
40		Screw, PNH, Phillips, SST, 4-40 x 15/16	4502-430	4
41		Screw, BDGH, Phillips, 6-32 x 3/16	45074-606	2
42		Screw, BDGH, Phillips, 6-32 x 1/4	45074-608	8
43		Nut, Hex, 4-40	4521-104	3
45		Tape, Double-Sided (White)	4813-100	AR
46	A1	Main Processor PCB Assembly	800772-002	1
47	A2	Assembly, Eagle 3000 Options (For 414888-002 and -004 Only)	416021-002	1
	A2	Assembly, Eagle 3000 Options (For 414888-003 and -005 Only)	416021-001	1
59		Insert, Foam, Glued, Bottom Section	415338-002	1
61		Clip, EMI	416053-002	1
62		Adhesive, Permabond 910FS	4851-074	AR
63		Adhesive, Loctite	4851-070	AR
The following items are determined by customer destination. They are included here for reference.				
48		Label, Writer (Press to Open)	415570-001	1
49		Writer Paper, 3-Roll Sample	9402 SAMPLE-046	1
50		Label, Marquette	413384-001	-
		Label, Corometrics, A Marquette Company	413383-002	-
		Label, Marquette Hellige	413383-003	-
51		Label, Eagle 3000 Patient Monitor	413383-001	-
		Label, Eagle 3000N Neonatal Monitor	413383-002	-
52		Label, Parameter Connectors (English)	413382-001	-
		Label, Parameter Connectors (German)	413382-002	-
		Label, Parameter Connectors (French)	413382-003	-
		Label, Parameter Connectors (Swedish)	413382-004	-
		Label, Parameter Connectors (Spanish)	413382-005	-
		Label, Parameter Connectors (Italian)	413382-006	-
		Label, Parameter Connectors (English International)	413382-007	-
53		Label, Voltage, Equipotential, Ratings (UL/CUL/CE)	415969-001	1
54		Label, Ethernet and ASYNC COMM Connectors	415151-001	1
55		Label, Prescription Device (USA Only)	415043-002	1

Item	Reference Designation	Parts List	Part Number	Qty
56		Label, Defib Sync, CO2, Inlet, Rmt Alm, and Exhaust Connectors (English)	415868-001	-
		Label, Defib Sync, CO2, Inlet, Rmt Alm, and Exhaust Connectors (German)	415858-002	-
		Label, Defib Sync, CO2, Inlet, Rmt Alm, and Exhaust Connectors (French)	415868-003	-
		Label, Defib Sync, CO2, Inlet, Rmt Alm, and Exhaust Connectors (Swedish)	415868-004	-
		Label, Defib Sync, CO2, Inlet, Rmt Alm, and Exhaust Connectors (Spanish)	415868-005	-
		Label, Defib Sync, CO2, Inlet, Rmt Alm, and Exhaust Connectors (Italian)	415868-006	-
		Label, Defib Sync, CO2, Inlet, Rmt Alm, and Exhaust Connectors (Dutch)	415868-007	-
57		Label, Membrane Switch Panel (English)	415001-001	-
		Label, Membrane Switch Panel (German)	415001-002	-
		Label, Membrane Switch Panel (French)	415001-003	-
		Label, Membrane Switch Panel (Swedish)	415001-004	-
		Label, Membrane Switch Panel (Spanish)	415001-005	-
		Label, Membrane Switch Panel (Italian)	415001-006	-
		Label, Membrane Switch Panel (Dutch)	415001-007	-
58		Cover, Patient Connectors (for units w/o invasive blood pressure)	408557-002	2
60		Label, UL 2601 Classification	416338-001	1

Switches and Controls PN 800772-002A

Listed below are all switches, controls, and LEDs found on the circuit board.

WARNING
Due to possible high voltage, always use an insulated screwdriver while making adjustments.

Table 2-1. Controls

Designator	Name	Function
DS1	Green light-emiting diode	Ethernet status LED
DS2	Yellow light-emiting diode	Ethernet status LED
DS3	Red light-emiting diode	Ethernet status LED
DS4	Green light-emiting diode	General purpose diagnostic LED
DS5	Yellow light-emiting diode	General purpose diagnostic LED
DS6	Red light-emiting diode	General purpose diagnostic LED
DS7	Red light-emiting diode	NBP diagnostic LED
DS8	Green light-emiting diode	NBP diagnostic LED

Table 2-2. Switches

S1 — 4-Position DIP Switch

Designator	Name	Function
SW1	Software updates	OPEN — Software updates enabled; NBP calibration enabled CLOSED — Software updates disabled; NBP calibration disabled
SW2	Watchdog timer	OPEN — Enabled CLOSED — Disabled
SW3	Reserved for future use	
SW4	Reserved for future use	Current Usage: OPEN — Normal operation CLOSED — Forces boot code menus to be displayed after reset

S2 — Dual Pressure Sensor Switch

Designator	Name	Function
S2	Dual pressure sensor switch	Detects NBP over pressure condition. One switch trips when cuff pressure is 150 mmHg (neonatal mode); the other switch trips when cuff pressure is 300 mmHg (adult mode).

PCB Connectors PN 800772-002A

Pin-by-pin descriptions and the signal names for each internal PCB connector are described below.

Table 2-3. Connector J2 (14-Pin Input Power Connector)

Pin	Name	Input/ Output	Description
1	NC		
2	+12	I	+12 V power to processor board
3	+12	I	+12 V power to processor board
4	GND	O	Common power return
5	GND	O	Common power return
6	GND	O	Common power return
7	+5	O	+5 V power to processor board
8	NC		
9	+12	I	+12 V power to processor board
10	+12	I	+12 V power to processor board
11	GND	O	Common power return
12	GND	O	Common power return
13	GND	O	Common power return
14	+5	I	+5 V power to processor board

Table 2-4. Connector J3 (26-Pin EL Display Power Connector)

Pin	Name	Input/ Output	Description
1	+12	O	+12 V power to display
2	+12	O	+12 V power to display
3	+5	O	+5 V power to display
4	+5	O	+5 V power to display
5	Blank		
6	GND	I	+5 V power return
7	VidU1	O	Video data bit, upper half of display
8	8-bit	O	8-bit
9	S	O	Vertical sync
10	GND	I	+5 V power return
11	CP1	O	Horizontal sync
12	GND	I	+5 V power return
13	CP2	O	Video clock to display
14	GND	I	+5 V power return
15	VidU0	O	Video data bit, upper half of display
16	GND	I	+5 V power return
17	VidU2	O	Video data bit, upper half of display
18	VidU3	O	Video data bit, upper half of display

Table 2-4. Connector J3 (26-Pin EL Display Power Connector)			
19	VidL0	O	Video data bit, lower half of display
20	GND	I	+5 V power return
21	VidL1	O	Video data bit, lower half of display
22	GND	I	+5 V power return
23	VidL2	O	Video data bit, lower half of display
24	GND	I	+5 V power return
25	VidL3	O	Video data bit, lower half of display
26	GND	I	+5 V power return

Table 2-5. Connector J4 (2-Pin Audio Speaker Connector)			
Pin	**Name**	**Input/ Output**	**Description**
1	Speaker +	O	Speaker output
2	Speaker -	I	Speaker input

Table 2-6. Connector J5 (3-Pin NBP Subsystem Pump Connector)			
Pin	**Name**	**Input/ Output**	**Description**
1	+V_PUMP	O	+12 V supplied to pump
2	PUMP_DRV	I	Pump drive
3	NC		

Table 2-7. Connector J6 (96-Pin Option Board Interface Connector)			
Pin	**Name**	**Input/ Output**	**Description**
A1	+5	O	+5 V power to option board
A2	SPARE1_I/O	I/O	Processor board spare I/O
A3	SPARE2_I/O	I/O	Processor board spare I/O
A4	OPT_BRD_IRQ5*	I	Interrupt from option board
A5	OPT_BRD_AVAIL*	I	Option board available
A6	AVEC*/IACK5*	I/O	Processor acknowledge
A7	ETCO2_TXD	O	ETCO2 transmit
A8	STARS_TXD	O	STARS transmit
A9	DSACK1*	I	Data strobe acknowledge
A10	DSACK0*	I	Data strobe acknowledge
A11	GND	I	+5 V power return
A12	SIZE1	O	Processor bus site to transfer
A13	GND	I	+5 V power return
A14	SIZE0	O	Processor bus site to transfer
A15	GND	I	+5 V power return
A16	AS*	O	Processor address strobe
A17	GND	I	+5 V power return
A18	DS*	O	Processor data strobe
A19	GND	I	+5 V power return

Table 2-7. Connector J6 (96-Pin Option Board Interface Connector)			
A20	OE*	O	Processor read strobe
A21	GND	I	+5 V power return
A22	R/W*	O	Processor read/write strobe
A23	GND	I	+5 V power return
A24	WE1*	O	Processor word write strobe
A25	GND	I	+5 V power return
A26	WE0*	O	Processor byte write strobe
A27	GND	I	+5 V power return
A28	NC		
A29	GND	I	+12 V power return
A30	GND	I	+12 V power return
A31	+12	O	+12 V power to option board
A32	+12	O	+12 V power to option board
B1	+5	O	+5 V power to option board
B2	OPT_TP_RX-	O	Ethernet twisted pair RX-
B3	OPT_TP_RX+	O	Ethernet twisted pair RX+
B4	MARKER_IN_IRQ4	I	Processor interrupt from MARKER_IN
B5	BOOT_SELECT*	I	Boot source
B6	RESETH*	O	Processor hard reset
B7	ETCO2_RXD	I	ETCO2 receive
B8	STARS_RXD	I	STARS receive
B9	A1	O	Processor address signal
B10	A3	O	Processor address signal
B11	A5	O	Processor address signal
B12	A7	O	Processor address signal
B13	A9	O	Processor address signal
B14	A11	O	Processor address signal
B15	A13	O	Processor address signal
B16	A15	O	Processor address signal
B17	A17	O	Processor address signal
B18	A19	O	Processor address signal
B19	A21	O	Processor address signal
B20	A23	O	Processor address signal
B21	D17	I/O	Processor data signal
B22	D19	I/O	Processor data signal
B23	D21	I/O	Processor data signal
B24	D23	I/O	Processor data signal
B25	D25	I/O	Processor data signal
B26	D27	I/O	Processor data signal
B27	D29	I/O	Processor data signal
B28	D31	I/O	Processor data signal
B29	GND	I	+12 V power return
B30	GND	I	+12 V power return
B31	+12	O	+12 V power to option board
B32	+12	O	+12 V power to option board

Table 2-7. Connector J6 (96-Pin Option Board Interface Connector)			
C1	+5	O	+5 V power to option board
C2	OPT_TP_TX+	O	Ethernet twisted pair TX-
C3	OPT_TP_TX-	O	Ethernet twisted pair TX+
C4	OPT_BRD_IRQ2*	I	Processor interrupt
C5	OPT_BRDCS*	O	Processor chip select — option board
C6	FLASH_WE1*	O	Option board write stroke
C7	ETCO2_IRQ3*	I	ETCO2 interrupt
C8	STARS_SERVICE*	O	STARS service mode
C9	A0	O	Processor address signal
C10	A2	O	Processor address signal
C11	A4	O	Processor address signal
C12	A6	O	Processor address signal
C13	A8	O	Processor address signal
C14	A10	O	Processor address signal
C15	A12	O	Processor address signal
C16	A14	O	Processor address signal
C17	A16	O	Processor address signal
C18	A18	O	Processor address signal
C19	A20	O	Processor address signal
C20	A22	O	Processor address signal
C21	D16	I/O	Processor data signal
C22	D18	I/O	Processor data signal
C23	D20	I/O	Processor data signal
C24	D22	I/O	Processor data signal
C25	D24	I/O	Processor data signal
C26	D26	I/O	Processor data signal
C27	D28	I/O	Processor data signal
C28	D30	I/O	Processor data signal
C29	GND	I	+12 V power return
C30	GND	I	+12 V power return
C31	+12	O	+12 V power to option board
C32	+12	O	+12 V power to option board

Table 2-8. Connector J7 (8-Pin Front Panel User Interface Connection)			
Pin	**Name**	**Input/ Output**	**Description**
1	GND	I	+5 V power return
2	GND	I	+5 V power return
3	+5	O	+5 V power to front panel LED
4	DISPLAY_ON/OFF*	I	User interface key
5	NBP_GO/STOP*	I	User interface key
6	BP_ZERO_ALL*	I	User interface key
7	SILENCE_ALARM*	I	User interface key
8	GRAPH_GO/STOP*	I	User interface key

Table 2-9. Connector J8 (12-Pin Data Acquisition System Connector)

Pin	Name	Input/ Output	Description
1	DAS_TXD	O	Serial data out to DAS
2	GND	I	Common power return
3	DAS_RXD	I	Serial data in from DAS
4	GND	I	Common power return
5	DAS_RESET*	O	To DAS
6	GND	I	Common power return
7	+12	O	+12 V power to DAS
8	GND	I	Common power return
9	+12	O	+12 V power to DAS
10	GND	I	Common power return
11	+5	O	+5 V power to DAS
12	GND	I	Common power return

Table 2-10. Connector J9 (15-Pin Ethernet Communication Connector)

Pin	Name	Input/ Output	Description
1	GND	I	Chassis ground
2	AVI_CLSN+	I	Collision presence +
3	AVI_TX+	O	Transmit data +
4	GND	I	Chassis ground
5	AVI_RX+	I	Receive data +
6	GND	I	Common power return
7	NC		
8	GND	I	Chassis ground
9	AVI_CLSN-	I	Collision presence -
10	AVI_TX-	O	Transmit data -
11	GND	I	Chassis ground
12	AVI_RX-	I	Receive data -
13	+12	O	+12 V power supply
14	GND	I	Chassis ground
15	NC		

Table 2-11. Connector J10 (9-Pin Asynchronous Communication Connector)

Pin	Name	Input/ Output	Description
1	ASYNC_RX+	I	Receive data + from peripheral device
2	NC		
3	ASYNC_RX-	I	Receive data - from peripheral device
4	+12	O	+12 V power out
5	ASYNC_TX-	O	Transmit data - to peripheral device
6	+12		+12 V power out
7	NC		

Table 2-11. Connector J10 (9-Pin Asynchronous Communication Connector)			
8	GND	I	Common power return
9	ASYNC_TX+	O	Transmit data + to peripheral device

Table 2-12. Connector J11 (10-Pin NBP Subsystem Manifold Connector)			
Pin	**Name**	**Input/ Output**	**Description**
1	VAL1_DRV	O	Valve 1 (0.06" diameter) low side drive
2	NC		
3	NC		
4	+12V_VALVE	O	Switched +12 V supplied to valve 1
5	NC		
6	NC		
7	+12V_VALVE	O	Valve 0 (0.03" diameter) low side drive
8	NC		
9	NC		
10	VAL0_DRV	O	Switched +12 V supplied to valve 0

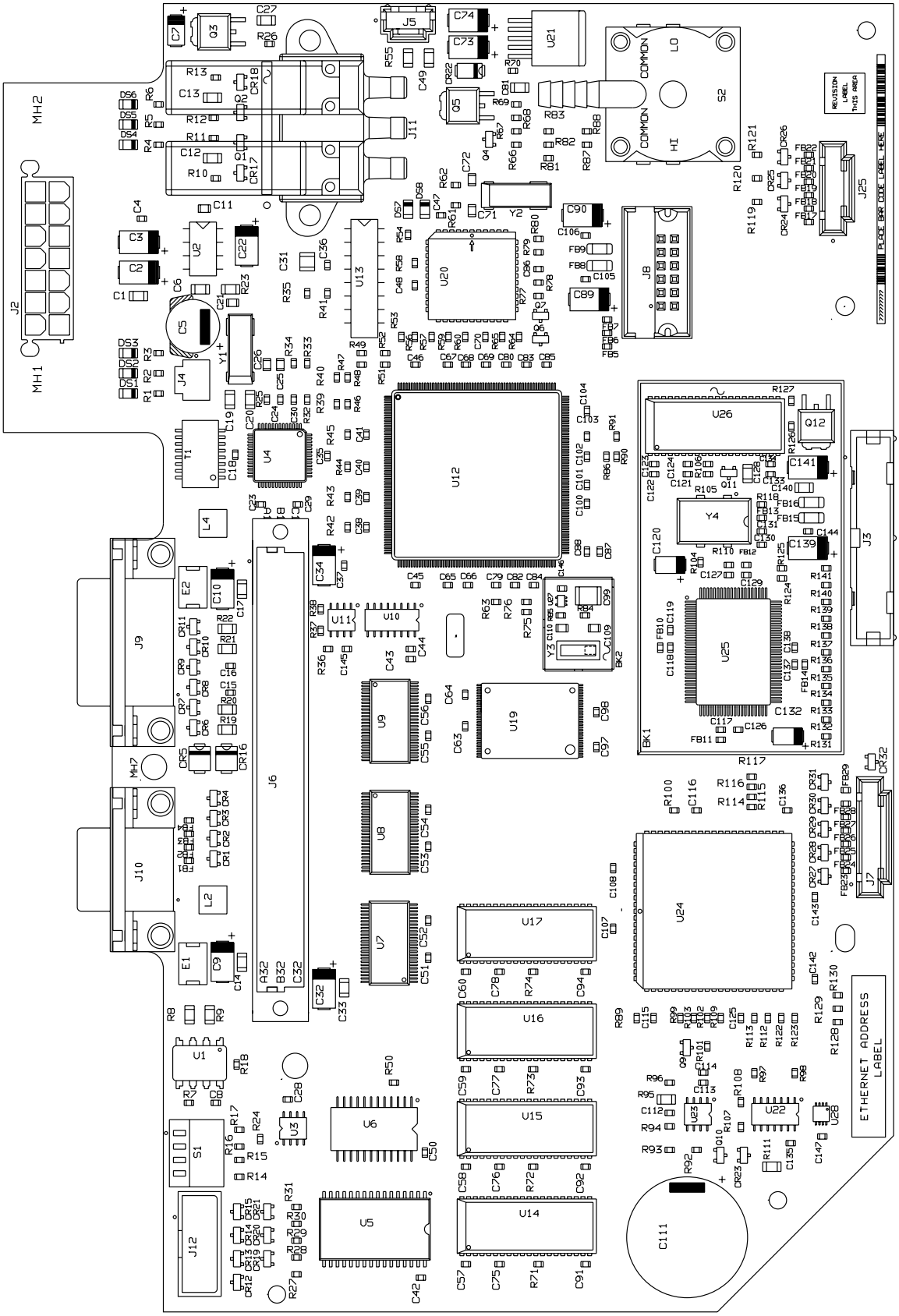
Table 2-13. Connector J12 (10-Pin Background Debug Mode Connector)			
Pin	**Name**	**Input/ Output**	**Description**
1	DS*	O	Data strobe active low output
2	BERR*	I	Bus error active low input
3	GND	I	+5 V power return
4	BKPT/DSCLK	I	Breakpoint active low input initiates a hardware breakpoint
5	GND	I	+5 V power return
6	FREEZE/CONFIGZ	O	Freeze active high output acknowledges a breakpoint
7	RESETH*	I/O	Reset active low bi-directional
8	IFETCH/DSI	O I	Instruction fetch output for normal mode instruction activity; Data serial in for background mode
9	+5	O	+5 V power
10	IPIPE/DSO	O O	Instruction pipe output for normal mode instruction activity; Data serial output for background mode

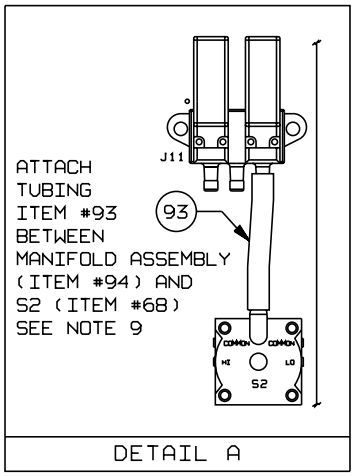
Table 2-14. Connector J25 (6-Pin Trim Knob Connector)			
Pin	**Name**	**Input/ Output**	**Description**
1	GND	I	+5 V power return
2	GND	I	+5 V power return
3	TRIM_PUSH	I	Trim Knob push select
4	TRIM_1	I	Trim Knob rotary select
5	TRIM_0	I	Trim Knob rotary select
6	+5	O	+5 V power

Parts Location Diagram PN 800772-002A

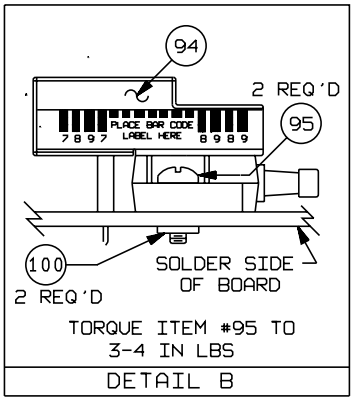
Page 1 of 2

TOP ASSEMBLY COMPONENT SIDE VIEW





DETAIL A



DETAIL B

NOTES:

1.) THE BAR SHOWN ON ALL POLARIZED CAPACITORS DENOTES POSITIVE TERMINAL.
2.) UNLESS OTHERWISE SPECIFIED, ALL RESISTANCE VALUES ARE IN OHMS, ALL CAPACITANCE VALUES ARE IN MICROFARADS.
3.) THE FOLLOWING COMPONENT(S) APPEAR ON THE SILKSCREEN, BUT ARE NOT USED ON THIS ASSEMBLY:C61, C62, C95, C96, U18.
4.) J11 (ITEM #20) MUST BE STRAIGHT AFTER WAVE SOLDERING.
5.) TRIM THE LEADS OF C111 (ITEM #31) AND J8 (ITEM #76) TO 0.050" +\- 0.010 BELOW BOTTOM OF CIRCUIT BOARD AFTER WAVE SOLDERING.
6.) THE NBP MANIFOLD (ITEM #94) IS TO BE INSTALLED AFTER WAVE SOLDERING AND IS NOT TO BE SUBJECTED TO ANY CLEANERS, ADHESIVES OR OTHER CHEMICALS. THIS ITEM TO BE REMOVED PRIOR TO ANY REWORK.
7.) ASSEMBLE SHIELD COVER FOR BK1 (ITEM #96) AFTER WAVE SOLDERING.
8.) TOP SIDE SOLDER FILLET NOT REQUIRED FOR S2 (ITEM #68).
9.) AIR IONIZER TO BE USED DURING ASSEMBLY OF ITEM #93.
10.) STAKE C5 TO CIRCUIT BOARD IN TWO PLACES AS SHOWN.

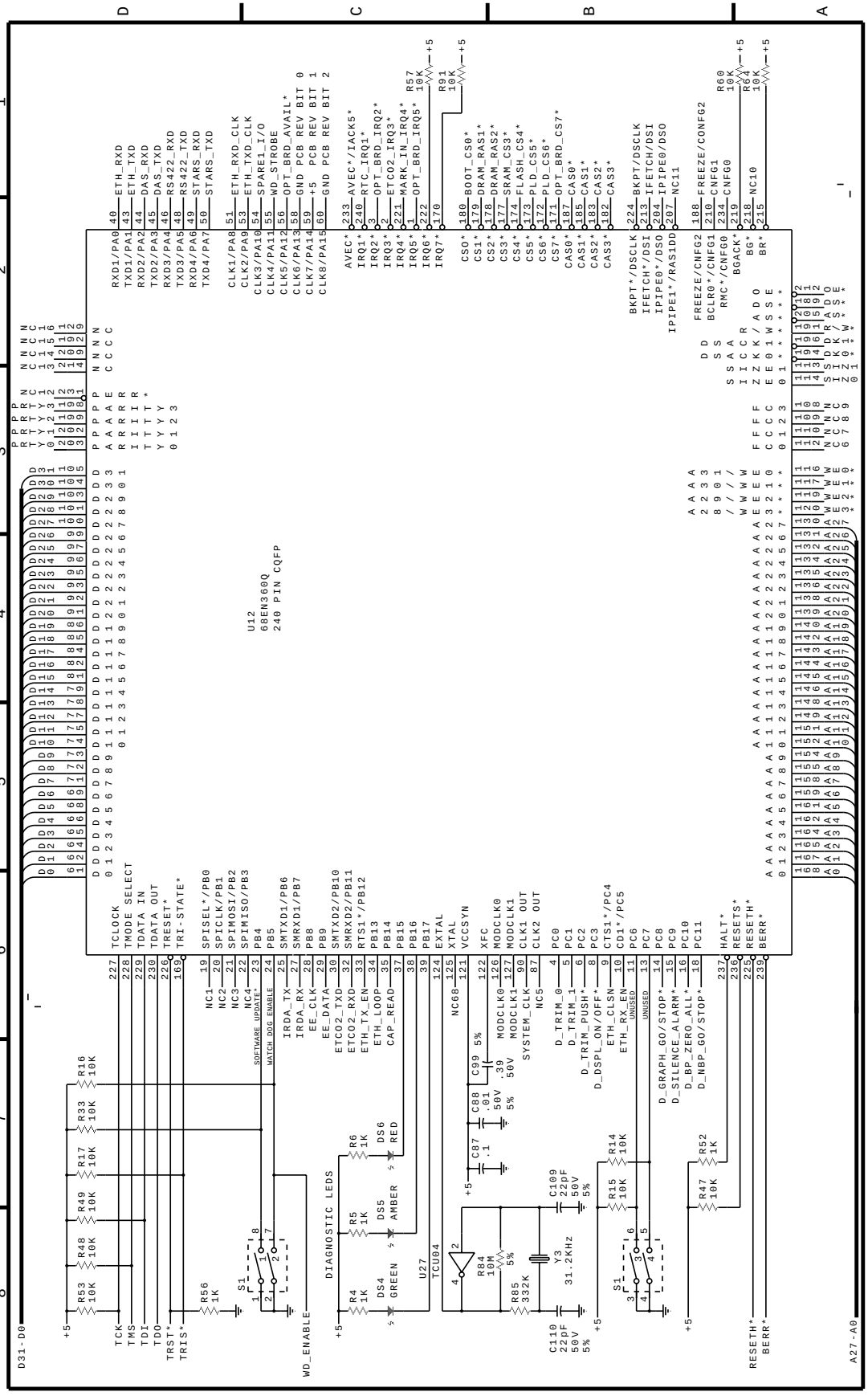
Parts List PN 800772-002A

Reference Designation	Description	Part Number	Qty
BK1	Shield, Fence	415325-001	1
BK2	Shield, Tin	415589-001	1
C1, 6, 12-14, 17, 27, 33, 49, 81, 128, 140	Cap, Cer, 0.1µF, 20%, 50V	404370-001	12
C2, 3, 9, 10, 22, 32, 34, 89, 90, 139, 141	Cap, Tant, 10µF, 20%, 25V, SM	1152-106	11
C4, 8, 18, 23, 24, 28-30, 35-43, 45-48, 50-60, 63-70, 75-80, 82-84, 85-87, 91-94, 97, 100-104, 106-108, 112, 114-116, 119, 121, 122, 125-127, 131, 133, 135, 136, 138, 142-147	Cap, Cer, 0.1µF, 5%, 16V	411575-002	86
C5	Cap, Al Radial, 470uF, 20%, 25V	1259-471	1
C7, 120, 132	Cap, Tant, 4.7µF, 20%, 20V, SM	402004-001	3
C11, 21	Cap, Cer, 0.047µF, 5%, 50V, SM	1182-824	2
C15, 16, 44, 88, 98, 105, 113, 117, 118, 123, 124, 129, 130, 134, 137	Cap, Cer, 0.1µF, 5%, 50V, SM	411575-012	15
C19, 20	Cap, Cer, 68pF, 5%, 50V, SM	1152-680	2
C25	Cap, Cer, 3900pF, 5%, 50V, SM	1182-564	1
C26	Cap, Cer, 0.039µF, 5%, 50V, SM	1182-393	1
C31	Cap, Cer, 0.22µF, 5%, 50V, SM	1182-224	1
C71, 72, 109, 110	Cap, Cer, 22pF, 5%, 50V, SM	1181-220	4
C73, 74	Cap, Tant, 22µF, 10%, 25V, SM	407653-001	2
C99	Cap, Cer, 0.39µF, 5%, 50V, SM	413751-001	1
C111	Cap, 1F, -20/+80%, 5.5V	402341-001	1
CR1-4, 6-15, 17-21, 24-32	Diode Pair, Series, SM D7000	2013-201	28
CR5, 16	Transorb, 15V, 5%, 600W SM6T15A	403188-001	2
CR22	Diode, Schottky, Barrier, 1A, 40V, SM MBRS140T3	403187-001	1
CR23	Diode, SM FDSO1503	2414-001	1
DS1, 4, 8	Light-Emitting Diode, Green, SM 1206	414417-004	3
DS2, 5	Light-Emitting Diode, Yellow, SM 1206	414417-003	2
DS3, 6, 7	Light-Emitting Diode, Red, SM 1206	414417-002	3
E1, 2	Surge Current Protector, 750mA	1914-075	2
FB1-7, 10-14, 17-29	Ferrite Bead BLM11A20	414061-001	1
FB8, 9, 15, 16	Ferrite Bead, SM	403800-002	4
J2	Connector, Receptacle, Vertical Minifit, BMI, 14-Pin	413799-001	1
J3	Connector, PC Header, Vertical, 4-Wall, Low Profile	17030-026	1
J4	Connector, Header, 2-Pin	17043-202	1

Reference Designation	Description	Part Number	Qty
J5	Connector, Header, Vertical, 3-Pin	17043-203	1
J6	Connector, DIN, Vertical, 96-Pin	415358-001	1
J7	Connector, Header, Vertical, Single Row, 8-Pin	415161-002	1
J8	Connector, PC Header, Vertical, 12-Pin	414032-001	1
J9	Connector, Receptacle, Right Angle, PC, 15-Pin	17026-315	1
J10	Connector, Receptacle, Right Angle, 9-Pin with Rivets	17026-209	1
J11	Connector, Receptacle, PC, 10-Pin, Vertical	1781-010	1
J12	Connecter, PC Header, Vertical, 10-Pin	17030-010	1
J25	Connector, Header, Vertical, Single Row, 6-Pin	415161-001	1
L2, 4	Coil, Choke, 1000Ω, 1.5A, SM	415233-001	2
Q1, 2, 4, 6, 7, 9, 11	Transistor, NPN, SM T3904	2511-001	7
Q3, 12	Transistor, HEXFET, P-Channel, 25W, SM IRFR9010TR	406513-001	2
Q5	Transistor, MOS-FET, N-Channel, SM 25N05	407659-001	1
Q10	Transistor, PNP, SM T3906	2511-101	1
R1-7, 11, 12, 28, 37, 52, 54, 56, 65, 68, 79, 80, 86-88, 90, 99, 108, 109, 130	Res, Cer, 1K, 1%, 1/16W, SM	410334-008	26
R8, 9	Res, Cer, 49.9 Ω, 1%, 1/8W, SM	1082-799	2
R10, 13, 63, 114, 131-141	Res, Cer, 49.9Ω, 1%, 1/16W, SM	410334-040	15
R14-18, 24, 26, 27, 29-34, 36, 38-40, 42-51, 53, 57-60, 64, 66, 67, 69-78, 89, 91, 92, 97, 98, 100-103, 105-107, 110, 112, 113, 115-129	Res, Cer, 10K, 1%, 1/16W, SM	410334-013	76
R19, 20, 21, 22	Res, 39.2 Ω, 1%, 1/8W, SM	1082-826	4
R23, 55	Res, Cer, 10Ω, 1%, 1/8W, SM	1082-786	2
R25	Res, Cer, 287K, 1%, 1/16W, SM	410334-117	1
R35	Res, Cer, 453K, 1%, 1/16W, SM	410334-116	1
R41	Res, Cer, 549K, 1%, 1/16W, SM	410334-118	1
R61, 96	Res, Cer, 1.0M, 1%, 1/16W, SM	410334-120	2
R62	Res, Cer, 2K, 1%, 1/16W, SM	410334-009	1
R81, 93	Res, Cer, 3.01K, 1%, 1/16W, SM	410334-018	2
R82	Res, Cer, 6.34K, 1%, 1/16W, SM	410334-048	1
R83	Res, Cer, 2.74K, 1%, SM	410334-078	1
R84	Res, Cer, 10M, 5%, 1/16W, SM	411723-003	1
R85	Res, Cer, 332K, 1%, 1/16W, SM	410334-115	1
R94	Res, Cer, 649K, 1%, 1/16W, SM	410334-119	1
R95	Res, Cer, 20M, 1%, 1/8W, SM	1081-510	1
R104	Res, Cer, 10 Ω, 1%, 1/16W, SM	410334-031	1
R111	Res, Cer, 200 Ω, 1%, 1/8W, SM	1082-762	1

Reference Designation	Description	Part Number	Qty
S1	Switch, DIP, SPST, 4-Position	415387-001	1
S2	Switch, Dual Pressure Sensor, PCB	413482-002	1
T1	Transformer, Ethernet Isolation, SM	407146-001	1
U1	Isolator, Optically-Coupled, SM 2602	407164-001	1
U2	Power Ampl, Audio LM386N	3102-386	1
U3	Transceiver, Low-Power ADM485	414085-001	1
U4	Ethernet Serial Interface Adapter, SM 68160	413696-001	1
U5	RAM, Static, 128K x 8-Bit, 70nS, SM 628128	406255-002	1
U6	Real-Time Clock/Calendar, 8-Bit, 85nS, SM RTC-64613	408831-001	1
U7	Transceiver, Bus, Octal ACTQ16245	410523-001	1
U8, 9	Buffer/Line Driver, Octal, SM ACTQ16244	410522-001	2
U10	Flip Flop, Positive-Edge-Triggered, Type D, Dual, SM ACT74	401433-001	1
U11	EEPROM, Serial, 16K x 8-Bit, CMOS AT24C16N	414007-002	1
U12	Microprocessor, 25mHz, SM 68EN360	413698-003	1
U13	Sound Generator, 3-Channel YMZ284	413704-001	1
U14-17, 26	RAM, Dynamic, 256K x 16-Bit TC514260BJ	3207-811	5
U19	EEPROM, Flash, 1M x 16-Bit, 70nS, SM 28F016	413703-001	1
U20	NBP Interface, FPGA	414521-001	1
U21	Volt Rgltr, Adj LM2941	403609-002	1
U22	NAND Gate, 2-Input, Quad, SM AC00	400813-001	1
U23	Microprocessor, Supervisor, SM MAX802L	416617-001	1
U24	EPLD, Programmed, Main Processor PCB	415297-001	1
U25	VGA Controller, Flat Panel, 100-Pin F65510	414290-001	1
U27	Inverter, Hex, CMOS, SM TC7SHUO4FU	416584-001	1
U28	Buffer, Dual, CMOS, 3-State Output, Quad TC7W126	416618-001	1
Y1	Crystal, 20MHz	408829-001	1
Y2	Crystal, 4.194304MHz, SM	407658-001	1
Y3	Crystal, 31.2kHz, SM	408946-001	1
Y4	Crystal Oscillator, 45.0-MHz, SM	404987-003	1
–	Tubing, Silastic (item 93 for manifold valve assembly)	401582-001	AR
–	Manifold Valve Assembly	414621-001	1
–	Screw, BDGH, Phillips, 6-32 x 3/8 (item 95 for manifold valve assembly)	45074-612	2
–	Shield, Cover (item 96 for BK1)	415325-002	1
–	Nut, PEM, 6-32 (item 100 for manifold valve assembly)	414292-001	2
–	Label, Model/Serial Number	404525-120	1
–	Adhesive/Sealant (item 102 for C5)	414240-001	AR
–	Circuit Board	800773-002A	1
–	Schematic Diagram	SD800772-002A	1

Schematic Diagram PN SD800772-002A



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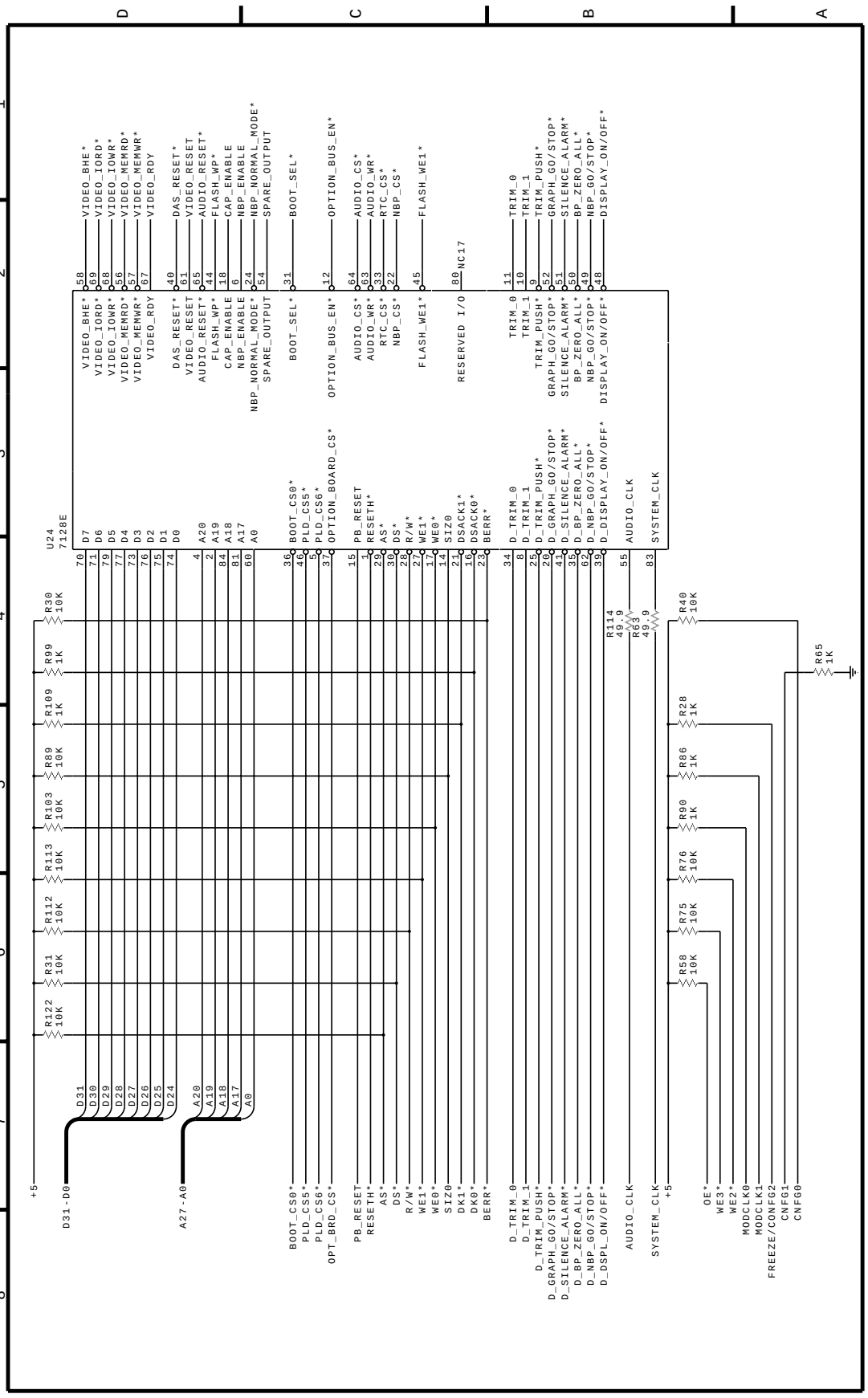

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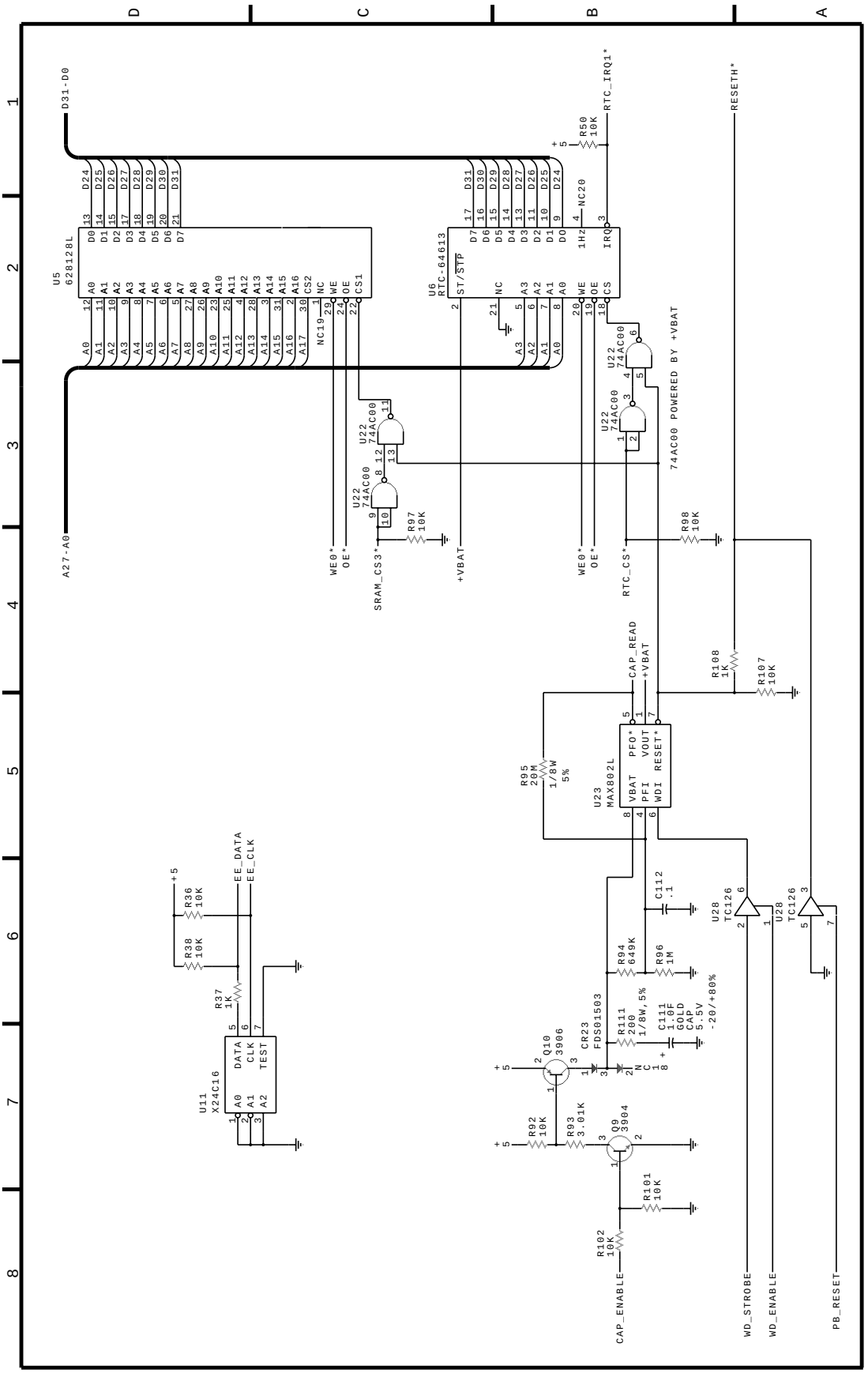
D31-D0
A27-A0
U5
628128L
U6
RTC-64613
ST/STP
U22
74AC00
74AC00 POWERED BY +VBAT
U23
MAX802L
U11
X24C16
U28
TC126
Q10
3906
Q9
3904
CR23
FDS01503
R50
10K
RTC_IRQ1*
RESETH*
R97
10K
R98
10K
R108
1K
R107
10K
R95
20M
1/8W
5%
R94
649K
R96
1M
C112
.1
C111
1.0F
GOLD
CAP
5.5V
-20/+80%
R111
200
1/8W, 5%
R92
10K
R93
3.01K
R101
10K
R102
10K
R36
10K
R38
10K
R37
1K
SRAM_CS3*
RTC_CS*
WE0*
OE*
+VBAT
CAP_READ
CAP_ENABLE
WD_STROBE
WD_ENABLE
PB_RESET
EE_DATA
EE_CLK

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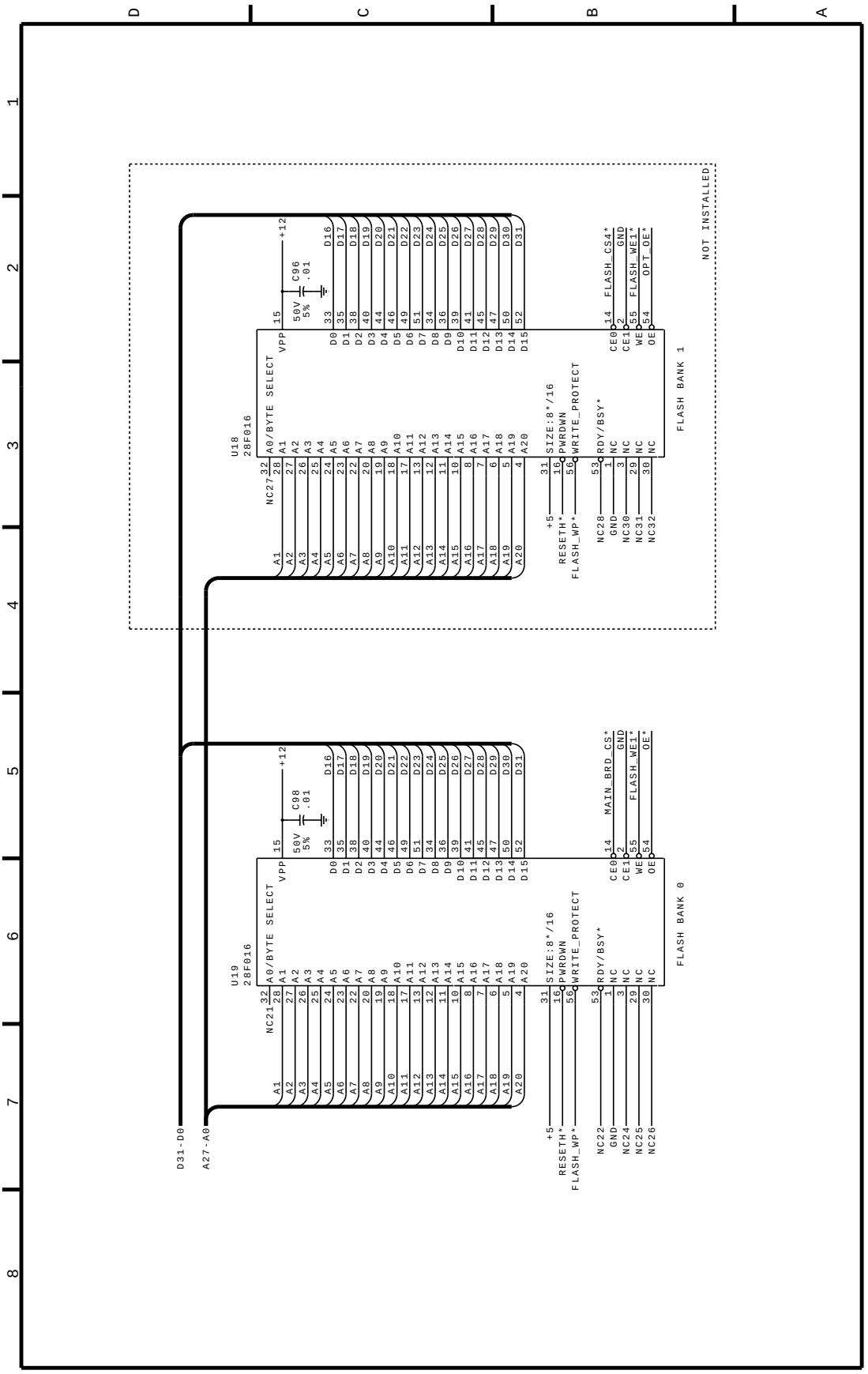
NOT INSTALLED
FLASH BANK 1
FLASH BANK 0
U18
28F016
U19
28F016
A0/BYTE SELECT
VPP
+12
C96
.01
C98
.01
50V
5%
SIZE:8*/16
PWRDWN
WRITE_PROTECT
RESETH*
FLASH_WP*
RDY/BSY*
MAIN_BRD_CS*
FLASH_CS4*
FLASH_WE1*
OPT_OE*
GND
NC
D31-D0
A27-A0

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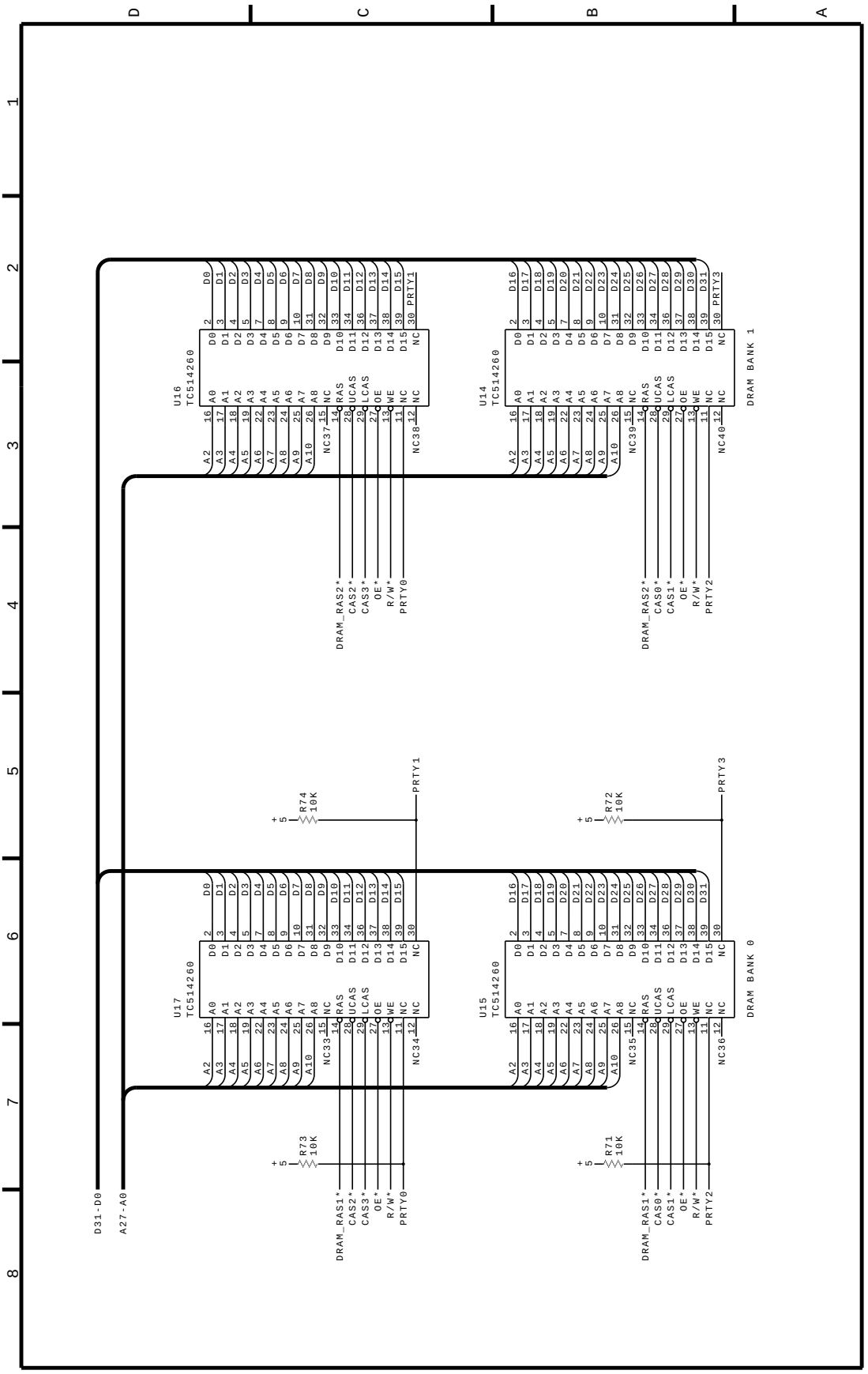
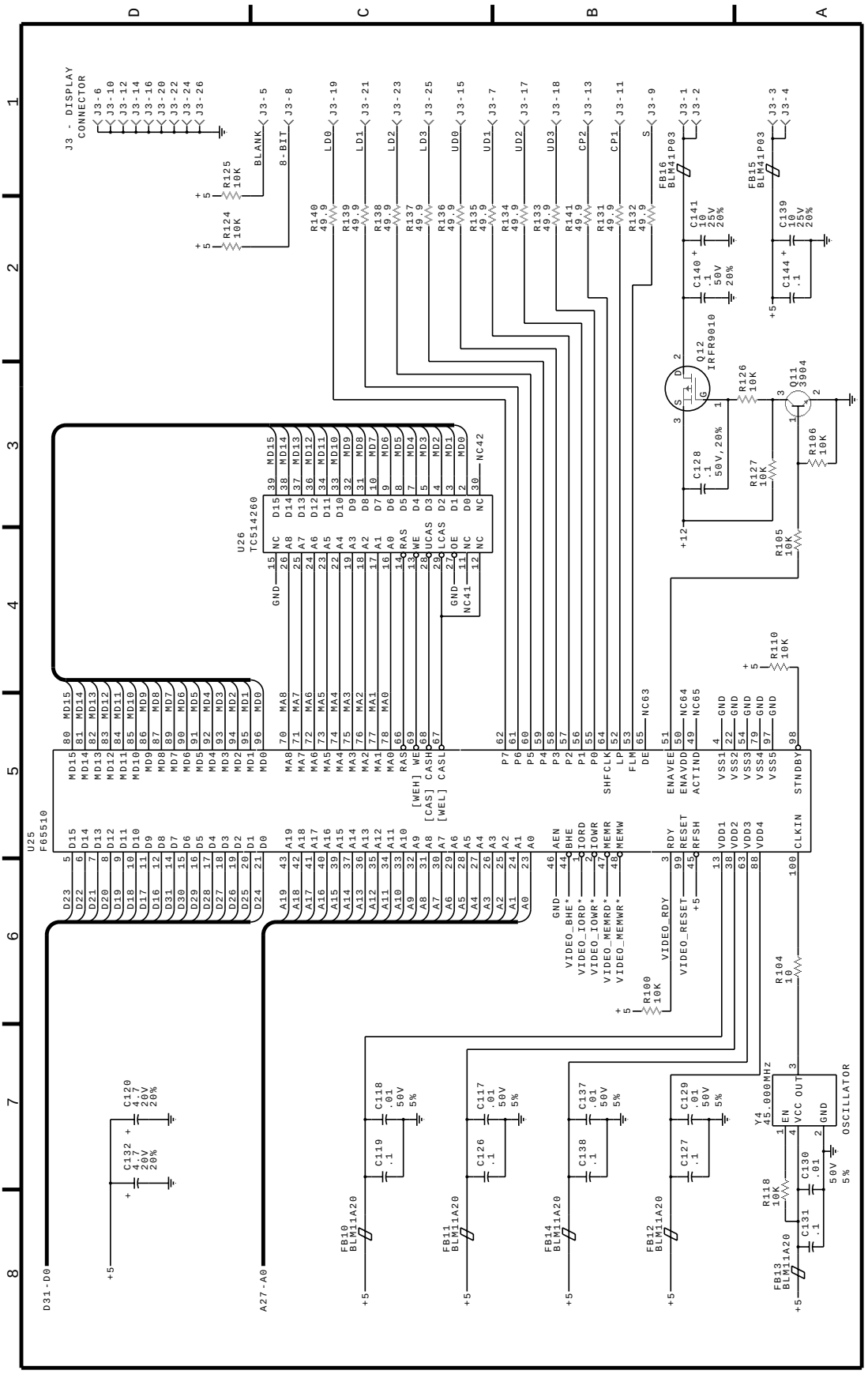

D
C
B
A
1
2
3
4
5
6
7
8
U16
TC514260
U14
TC514260
U17
TC514260
U15
TC514260
DRAM BANK 1
DRAM BANK 0
R74
10K
R73
10K
R72
10K
R71
10K
PRTY1
PRTY3
D31-D0
A27-A0
DRAM_RAS2*
CAS2*
CAS3*
OE*
R/W*
PRTY0
DRAM_RAS1*
CAS0*
CAS1*
PRTY2


J3 - DISPLAY CONNECTOR
U25 F65510
U26 TC514260
Y4 45.000MHz
OSCILLATOR
Q12 IRFR9010
Q11 3904
D31-D0
A27-A0

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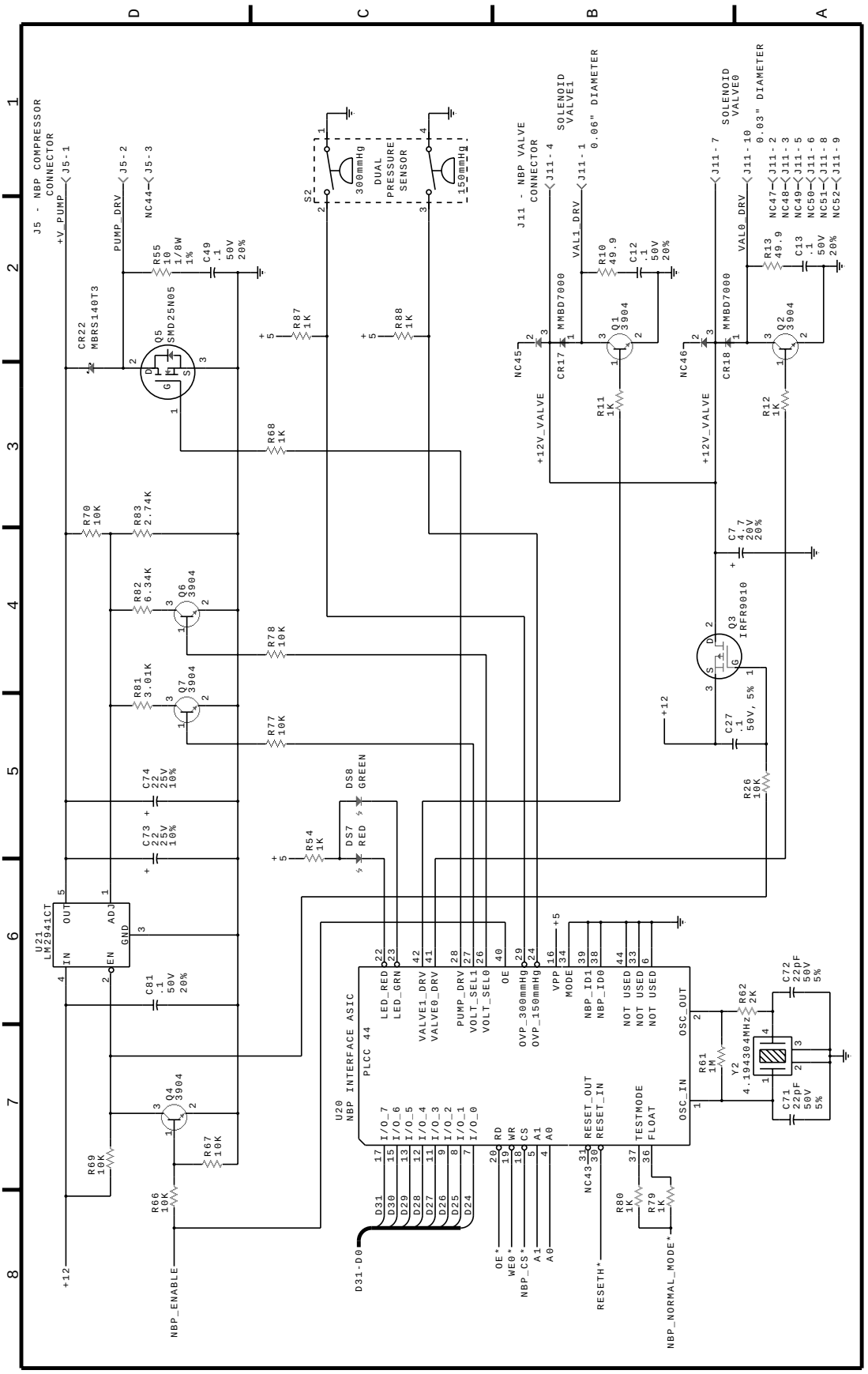
J5 - NBP COMPRESSOR CONNECTOR
+V_PUMP
PUMP_DRV
CR22 MBRS140T3
Q5 SMD25N05
R55 10 1/8W 1%
C49 .1 50V 20%
S2
300mmHg
DUAL PRESSURE SENSOR
150mmHg
R87 1K
R88 1K
J11 - NBP VALVE CONNECTOR
SOLENOID VALVE1
0.06" DIAMETER
VAL1_DRV
MMBD7000
Q1 3904
R10 49.9
C12 .1 50V 20%
CR17
R11 1K
+12V_VALVE
SOLENOID VALVE0
0.03" DIAMETER
VAL0_DRV
CR18
Q2 3904
R13 49.9
C13 .1 50V 20%
R12 1K
C7 4.7 40V 20%
Q3 IRFR9010
C27 .1 50V, 5%
+12
R26 10K
R68 1K
R70 10K
R83 2.74K
R82 6.34K
Q6 3904
R78 10K
R81 3.01K
Q7 3904
R77 10K
C74 22 25V 10%
C73 22 25V 10%
DS8 GREEN
DS7 RED
R54 1K
U21 LM2941CT
C81 .1 50V 20%
U20 NBP INTERFACE ASIC
PLCC 44
LED_RED
LED_GRN
VALVE1_DRV
VALVE0_DRV
PUMP_DRV
VOLT_SEL1
VOLT_SEL0
OVP_300mmHg
OVP_150mmHg
VPP
MODE
NBP_ID1
NBP_ID0
NOT USED
OSC_OUT
OSC_IN
RESET_OUT
RESET_IN
TESTMODE
FLOAT
R61 1M
Y2 4.194304MHz
R62 2K
C72 22pF 50V 5%
C71 22pF 50V 5%
Q4 3904
R69 10K
R66 10K
R67 10K
R80 1K
R79 1K
NBP_ENABLE
NBP_NORMAL_MODE*
RESETH*
D31-D0
OE*
WE0*
NBP_CS*
A1
A0

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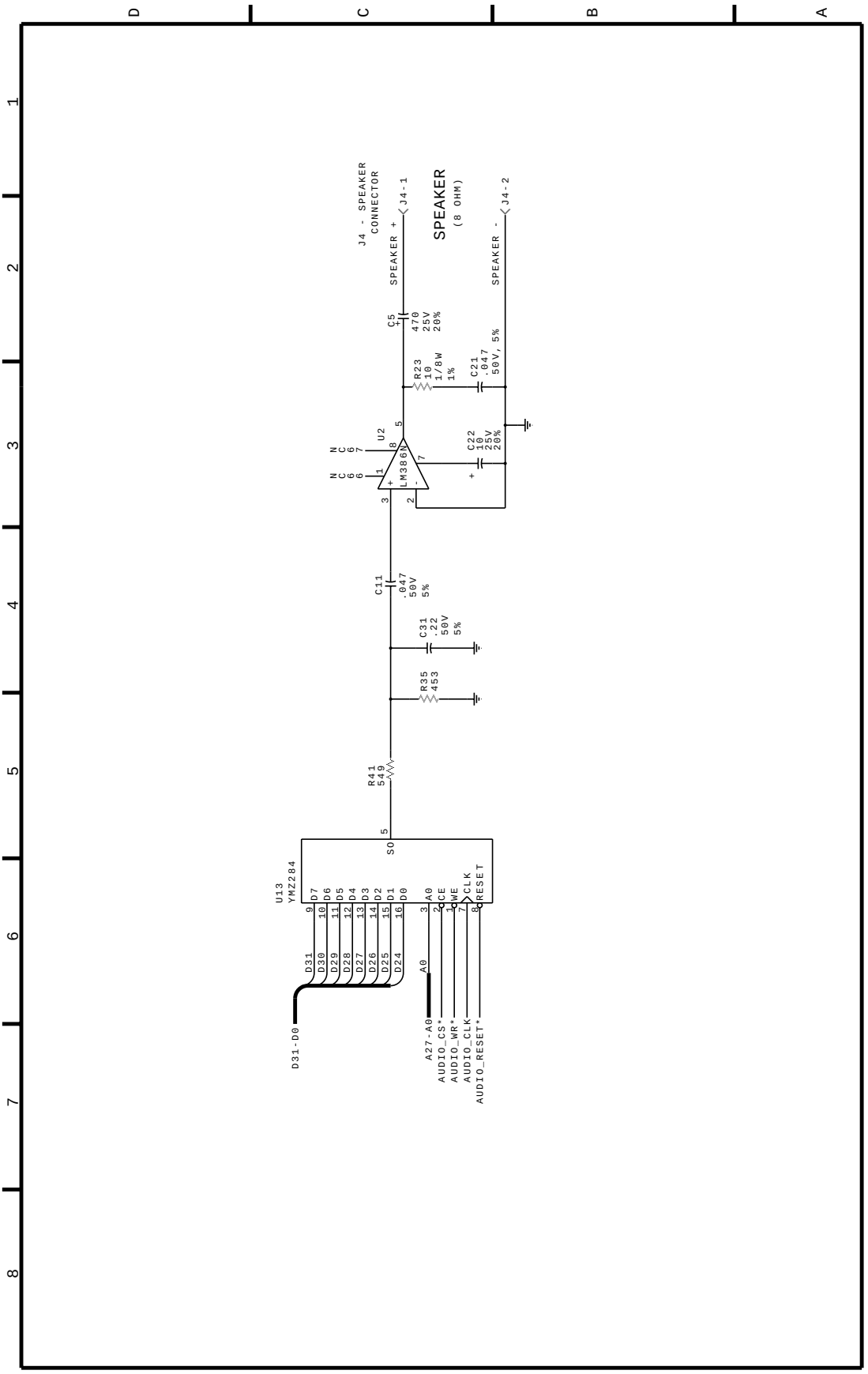
J4 - SPEAKER CONNECTOR
J4-1
SPEAKER +
SPEAKER
(8 OHM)
SPEAKER -
J4-2
C5
470
25V
20%
R23
10
1/8W
1%
C21
.047
50V, 5%
C22
10
25V
20%
U2
LM3860
NC
NC
NC
NC
C11
.047
50V
5%
C31
.22
50V
5%
R35
453
R41
549
U13
YM2284
SO
D7
D6
D5
D4
D3
D2
D1
D0
D31
D30
D29
D28
D27
D26
D25
D24
D31-D0
A0
CE
WE
CLK
RESET
A27-A0
AUDIO_CS*
AUDIO_WR*
AUDIO_CLK
AUDIO_RESET*

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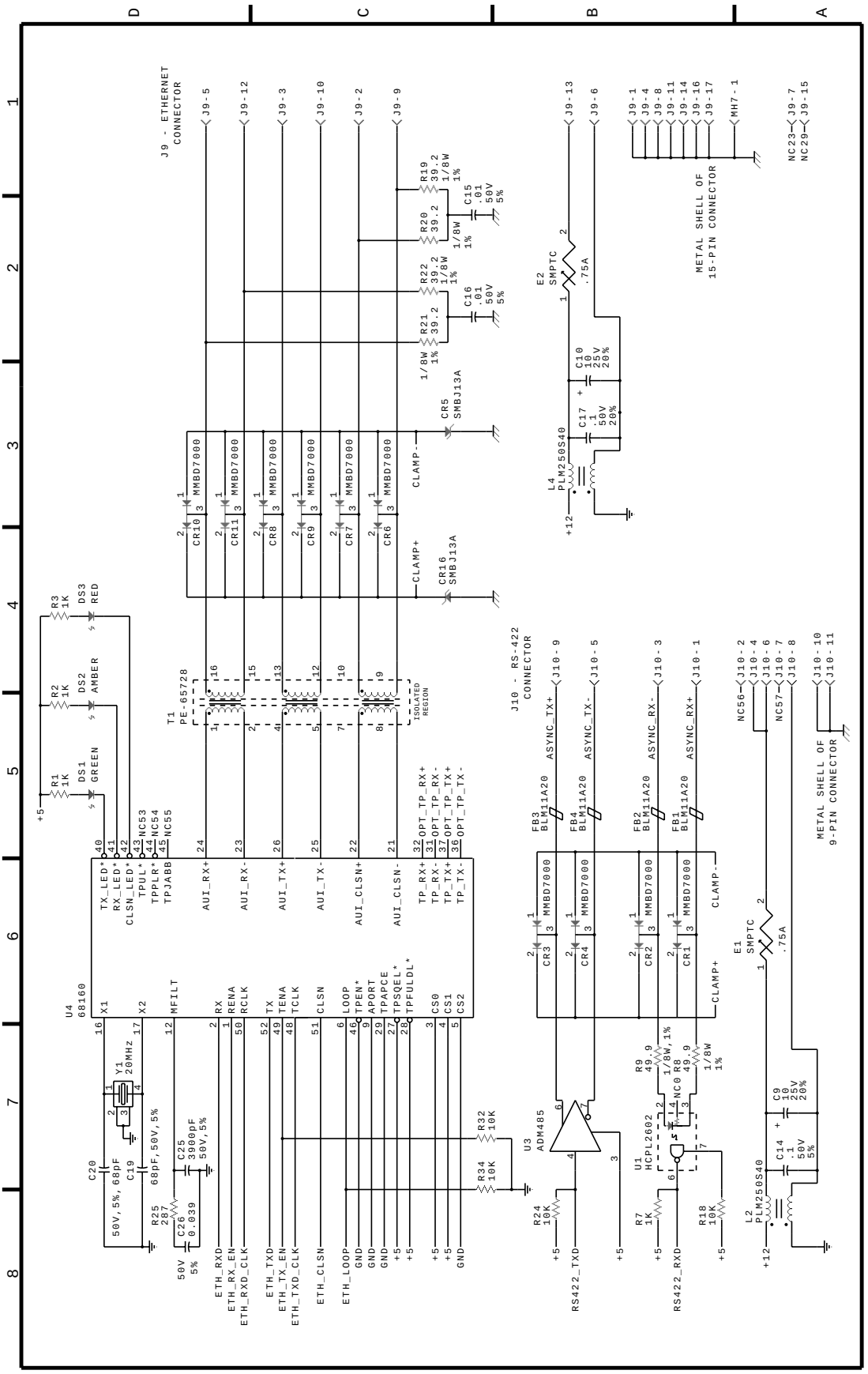
J9 - ETHERNET CONNECTOR
J10 - RS-422 CONNECTOR
METAL SHELL OF 15-PIN CONNECTOR
METAL SHELL OF 9-PIN CONNECTOR
ISOLATED REGION
U4 68160
T1 PE-65728
U3 ADM485
U1 HCPL2602
E1 SMPTC
E2 SMPTC
L2 PLM250S40
L4 PLM250S40
CR5 SMBJ13A
CR16 SMBJ13A
MMBD7000
BLM11A20
ASYNC_TX+
ASYNC_TX-
ASYNC_RX-
ASYNC_RX+
CLAMP+
CLAMP-
ETH_TXD
ETH_TX_EN
ETH_TXD_CLK
ETH_CLSN
ETH_LOOP
ETH_RXD
ETH_RX_EN
ETH_RXD_CLK
RS422_TXD
RS422_RXD

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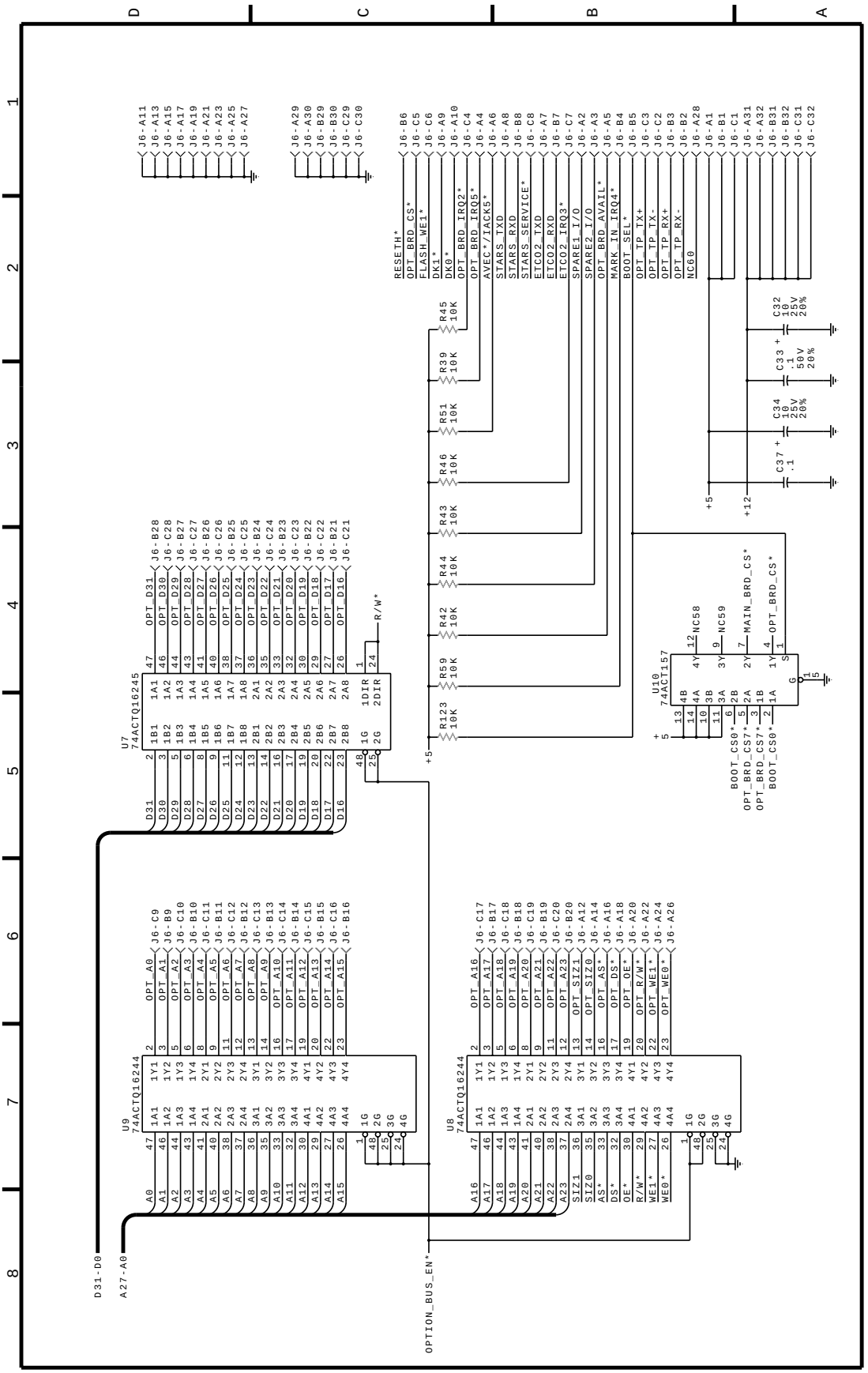

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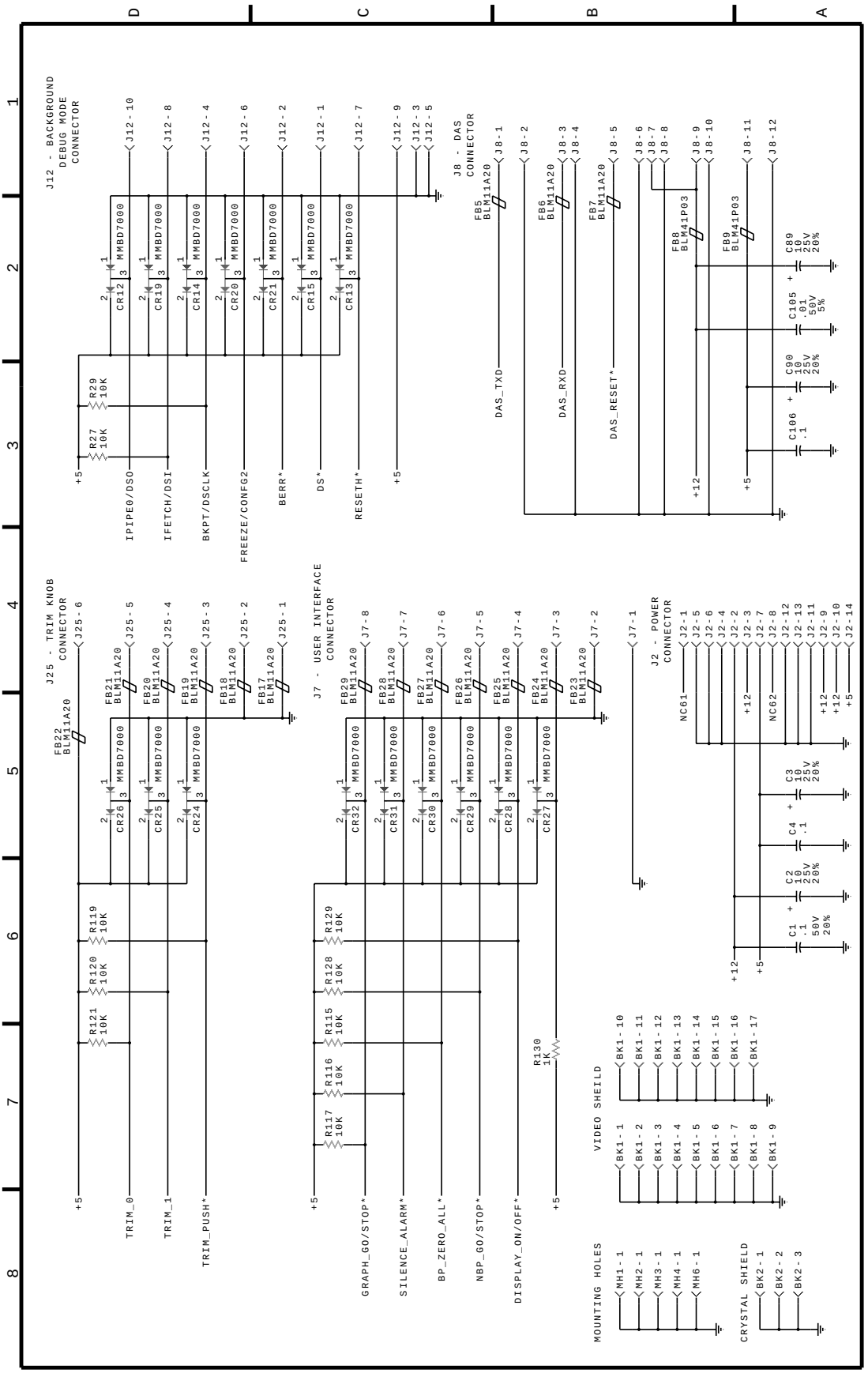
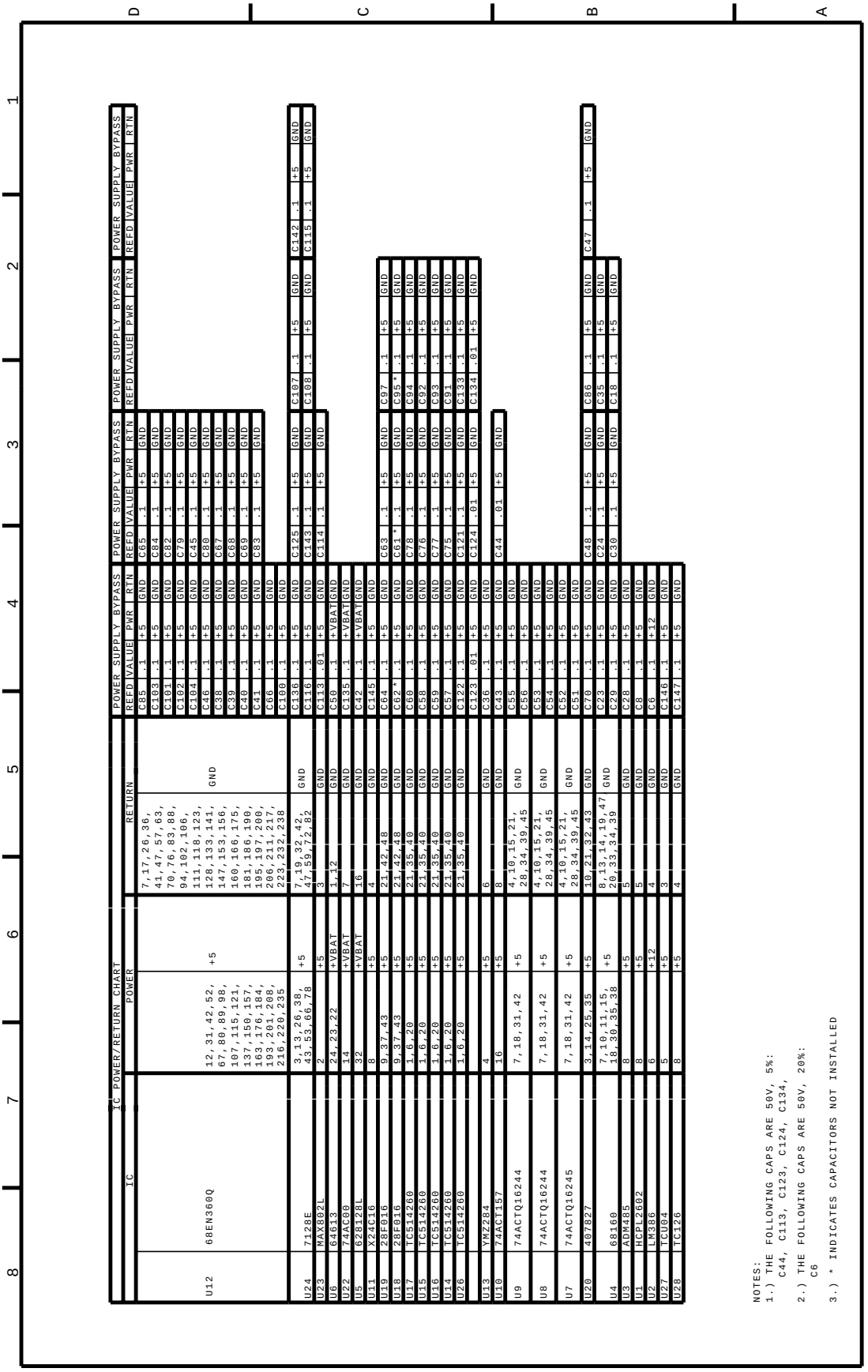

J12 - BACKGROUND DEBUG MODE CONNECTOR
J8 - DAS CONNECTOR
J25 - TRIM KNOB CONNECTOR
J7 - USER INTERFACE CONNECTOR
J2 - POWER CONNECTOR
VIDEO SHEILD
MOUNTING HOLES
CRYSTAL SHIELD
IPIPE0/DSO
IFETCH/DSI
BKPT/DSCLK
FREEZE/CONFG2
BERR*
DS*
RESETH*
DAS_TXD
DAS_RXD
DAS_RESET*
TRIM_0
TRIM_1
TRIM_PUSH*
GRAPH_GO/STOP*
SILENCE_ALARM*
BP_ZERO_ALL*
NBP_GO/STOP*
DISPLAY_ON/OFF*



IC	S	IC POWER/RETURN CHART POWER	RETURN	POWER SUPPLY BYPASS REFD	VALUE	PWR	RTN	POWER SUPPLY BYPASS REFD	VALUE	PWR	RTN	POWER SUPPLY BYPASS REFD	VALUE	PWR	RTN
U12	68EN360Q	12,31,42,52, 67,80,89,98, 107,115,121, 137,150,157, 163,176,184, 193,201,208, 216,220,235 +5	7,17,26,36, 41,47,57,63, 70,76,83,88, 94,102,106, 111,118,123, 128,133,141, 147,153,156, 160,166,175, 181,186,190, 195,197,200, 206,211,217, 223,232,238 GND	C85 .1 +5 GND				C84 .1 +5 GND				C82 .1 +5 GND			
				C103 .1 +5 GND				C101 .1 +5 GND				C79 .1 +5 GND			
				C102 .1 +5 GND				C104 .1 +5 GND				C45 .1 +5 GND			
				C46 .1 +5 GND				C80 .1 +5 GND				C87 .1 +5 GND			
				C38 .1 +5 GND				C68 .1 +5 GND				C69 .1 +5 GND			
				C40 .1 +5 GND				C41 .1 +5 GND				C83 .1 +5 GND			
				C66 .1 +5 GND				C100 .1 +5 GND							
U24	7128E	3,13,26,38, 43,53,66,78 +5	7,19,32,42, 47,59,72,82 GND	C136 .1 +5 GND				C125 .1 +5 GND				C107 .1 +5 GND			
U23	MAX802L	2 +5	3 GND	C116 .1 +5 GND				C143 .1 +5 GND				C108 .1 +5 GND			
U6	64613	24,23,22 +VBAT	1,12 GND	C113 .01 +5 GND				C114 .1 +5 GND							
U22	74AC00	14 +VBAT	7 GND	C50 .1 +VBAT GND				C135 .1 +VBAT GND							
U5	628128L	32 +VBAT	16 GND	C42 .1 +VBAT GND											
U11	X24C16	8 +5	4 GND	C145 .1 +5 GND											
U19	28F016	9,37,43 +5	21,42,48 GND	C64 .1 +5 GND				C63 .1 +5 GND				C97 .1 +5 GND			
U18	28F016	9,37,43 +5	21,42,48 GND	C62* .1 +5 GND				C61* .1 +5 GND				C95* .1 +5 GND			
U17	TC514260	1,6,20 +5	21,35,40 GND	C60 .1 +5 GND				C78 .1 +5 GND				C94 .1 +5 GND			
U15	TC514260	1,6,20 +5	21,35,40 GND	C58 .1 +5 GND				C76 .1 +5 GND				C92 .1 +5 GND			
U16	TC514260	1,6,20 +5	21,35,40 GND	C59 .1 +5 GND				C77 .1 +5 GND				C93 .1 +5 GND			
U14	TC514260	1,6,20 +5	21,35,40 GND	C57 .1 +5 GND				C75 .1 +5 GND				C91 .1 +5 GND			
U26	TC514260	1,6,20 +5	21,35,40 GND	C122 .1 +5 GND				C121 .1 +5 GND				C133 .1 +5 GND			
				C123 .01 +5 GND				C124 .01 +5 GND				C134 .01 +5 GND			
U13	YMZ284	4 +5	6 GND	C36 .1 +5 GND											
U10	74ACT157	16 +5	8 GND	C43 .1 +5 GND				C44 .01 +5 GND							
U9	74ACTQ16244	7,18,31,42 +5	4,10,15,21, 28,34,39,45 GND	C55 .1 +5 GND											
				C56 .1 +5 GND											
U8	74ACTQ16244	7,18,31,42 +5	4,10,15,21, 28,34,39,45 GND	C53 .1 +5 GND											
				C54 .1 +5 GND											
U7	74ACTQ16245	7,18,31,42 +5	4,10,15,21, 28,34,39,45 GND	C52 .1 +5 GND											
				C51 .1 +5 GND											
U20	407827	3,14,25,35 +5	10,21,32,43 GND	C70 .1 +5 GND				C48 .1 +5 GND				C86 .1 +5 GND			
				C23 .1 +5 GND				C24 .1 +5 GND				C35 .1 +5 GND			
U4	68160	7,10,11,15, 18,30,35,38 +5	8,13,14,19,47 20,33,34,39 GND	C29 .1 +5 GND				C30 .1 +5 GND				C18 .1 +5 GND			
U3	ADM485	8 +5	5 GND	C28 .1 +5 GND											
U1	HCPL2602	8 +5	5 GND	C8 .1 +5 GND											
U2	LM386	6 +12	4 GND	C6 .1 +12 GND											
U27	TCU04	5 +5	3 GND	C146 .1 +5 GND											
U28	TC126	8 +5	4 GND	C147 .1 +5 GND											

NOTES:
1.) THE FOLLOWING CAPS ARE 50V, 5%:
C44, C113, C123, C124, C134,
C6

2.) THE FOLLOWING CAPS ARE 50V, 20%:

3.) * INDICATES CAPACITORS NOT INSTALLED

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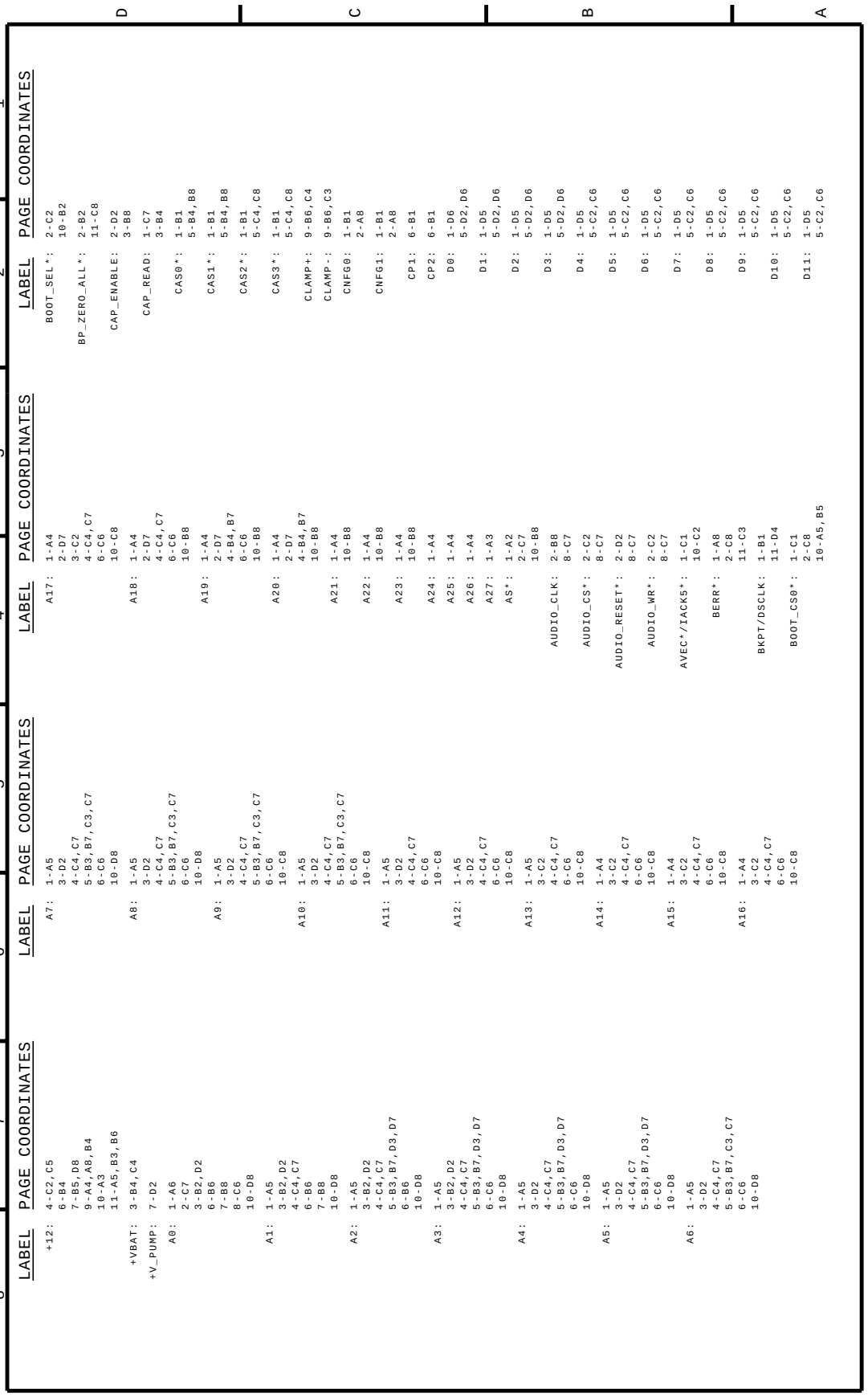
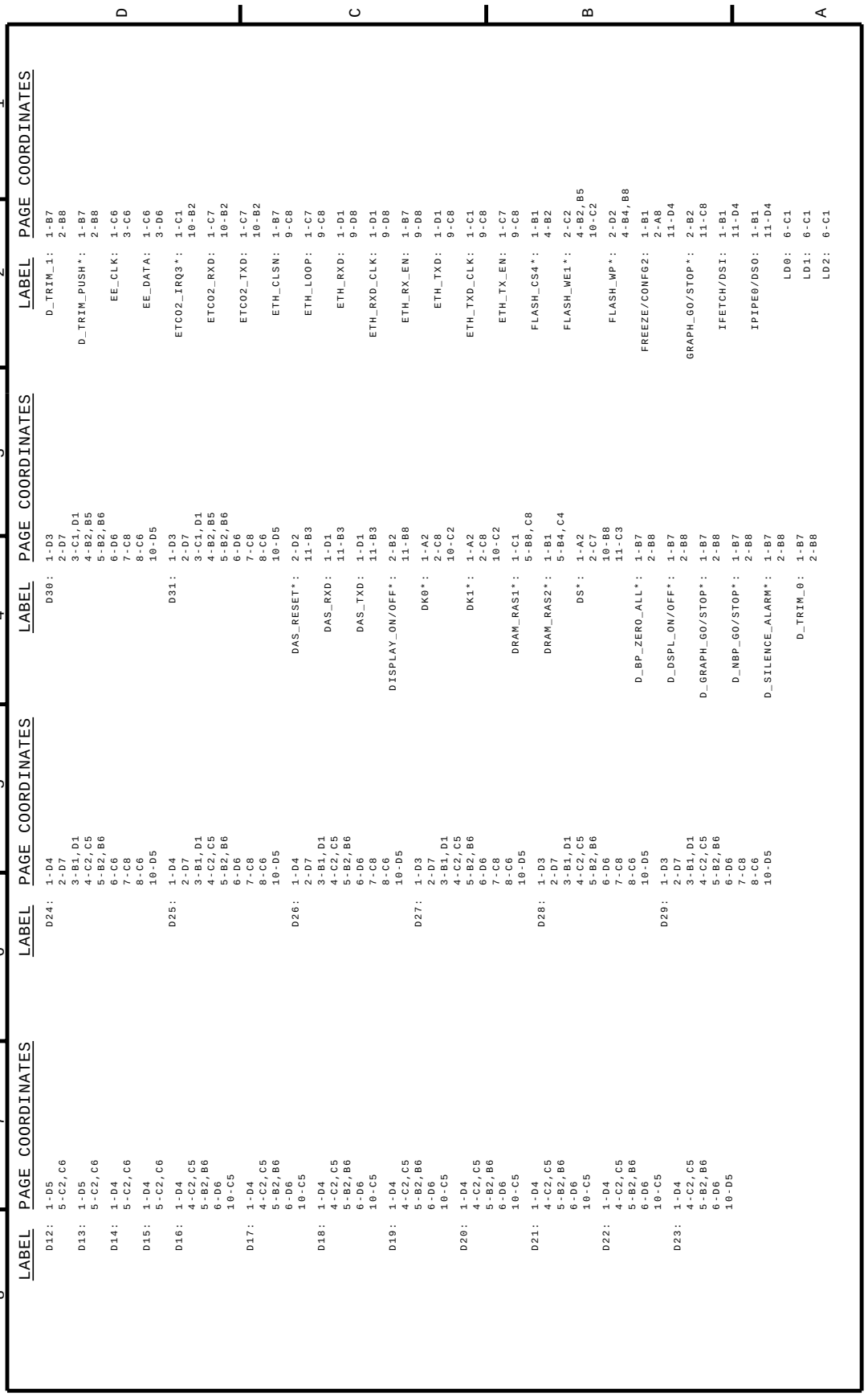


LABEL	PAGE COORDINATES
+12:	4-C2,C5
	6-B4
	7-B5,D8
	9-A4,A8,B4
	10-A3
	11-A5,B3,B6
+VBAT:	3-B4,C4
+V_PUMP:	7-D2
A0:	1-A6
	2-C7
	3-B2,D2
	6-B6
	7-B8
	8-C6
	10-D8
A1:	1-A5
	3-B2,D2
	4-C4,C7
	6-B6
	7-B8
	10-D8
A2:	1-A5
	3-B2,D2
	4-C4,C7
	5-B3,B7,D3,D7
	6-B6
	10-D8
A3:	1-A5
	3-B2,D2
	4-C4,C7
	5-B3,B7,D3,D7
	6-C6
	10-D8
A4:	1-A5
	3-D2
	4-C4,C7
	5-B3,B7,D3,D7
	6-C6
	10-D8
A5:	1-A5
	3-D2
	4-C4,C7
	5-B3,B7,D3,D7
	6-C6
	10-D8
A6:	1-A5
	3-D2
	4-C4,C7
	5-B3,B7,C3,C7
	6-C6
	10-D8
A7:	1-A5
	3-D2
	4-C4,C7
	5-B3,B7,C3,C7
	6-C6
	10-D8
A8:	1-A5
	3-D2
	4-C4,C7
	5-B3,B7,C3,C7
	6-C6
	10-D8
A9:	1-A5
	3-D2
	4-C4,C7
	5-B3,B7,C3,C7
	6-C6
	10-C8
A10:	1-A5
	3-D2
	4-C4,C7
	5-B3,B7,C3,C7
	6-C6
	10-C8
A11:	1-A5
	3-D2
	4-C4,C7
	6-C6
	10-C8
A12:	1-A5
	3-D2
	4-C4,C7
	6-C6
	10-C8
A13:	1-A5
	3-C2
	4-C4,C7
	6-C6
	10-C8
A14:	1-A4
	3-C2
	4-C4,C7
	6-C6
	10-C8
A15:	1-A4
	3-C2
	4-C4,C7
	6-C6
	10-C8
A16:	1-A4
	3-C2
	4-C4,C7
	6-C6
	10-C8
A17:	1-A4
	2-D7
	3-C2
	4-C4,C7
	6-C6
	10-C8
A18:	1-A4
	2-D7
	4-C4,C7
	6-C6
	10-B8
A19:	1-A4
	2-D7
	4-B4,B7
	6-C6
	10-B8
A20:	1-A4
	2-D7
	4-B4,B7
	10-B8
A21:	1-A4
	10-B8
A22:	1-A4
	10-B8
A23:	1-A4
	10-B8
A24:	1-A4
A25:	1-A4
A26:	1-A4
A27:	1-A3
AS*:	1-A2
	2-C7
	10-B8
AUDIO_CLK:	2-B8
	8-C7
AUDIO_CS*:	2-C2
	8-C7
AUDIO_RESET*:	2-D2
	8-C7
AUDIO_WR*:	2-C2
	8-C7
AVEC*/IACK5*:	1-C1
	10-C2
BERR*:	1-A8
	2-C8
	11-C3
BKPT/DSCLK:	1-B1
	11-D4
BOOT_CS0*:	1-C1
	2-C8
	10-A5,B5
BOOT_SEL*:	2-C2
	10-B2
BP_ZERO_ALL*:	2-B2
	11-C8
CAP_ENABLE:	2-D2
	3-B8
CAP_READ:	1-C7
	3-B4
CAS0*:	1-B1
	5-B4,B8
CAS1*:	1-B1
	5-B4,B8
CAS2*:	1-B1
	5-C4,C8
CAS3*:	1-B1
	5-C4,C8
CLAMP+:	9-B6,C4
CLAMP-:	9-B6,C3
CNFG0:	1-B1
	2-A8
CNFG1:	1-B1
	2-A8
CP1:	6-B1
CP2:	6-B1
D0:	1-D6
	5-D2,D6
D1:	1-D5
	5-D2,D6
D2:	1-D5
	5-D2,D6
D3:	1-D5
	5-D2,D6
D4:	1-D5
	5-C2,C6
D5:	1-D5
	5-C2,C6
D6:	1-D5
	5-C2,C6
D7:	1-D5
	5-C2,C6
D8:	1-D5
	5-C2,C6
D9:	1-D5
	5-C2,C6
D10:	1-D5
	5-C2,C6
D11:	1-D5
	5-C2,C6



LABEL	PAGE COORDINATES
D12:	1-D5
	5-C2,C6
D13:	1-D5
	5-C2,C6
D14:	1-D4
	5-C2,C6
D15:	1-D4
	5-C2,C6
D16:	1-D4
	4-C2,C5
	5-B2,B6
	6-D6
	10-C5
D17:	1-D4
	4-C2,C5
	5-B2,B6
	6-D6
	10-C5
D18:	1-D4
	4-C2,C5
	5-B2,B6
	6-D6
	10-C5
D19:	1-D4
	4-C2,C5
	5-B2,B6
	6-D6
	10-C5
D20:	1-D4
	4-C2,C5
	5-B2,B6
	6-D6
	10-C5
D21:	1-D4
	4-C2,C5
	5-B2,B6
	6-D6
	10-C5
D22:	1-D4
	4-C2,C5
	5-B2,B6
	6-D6
	10-C5
D23:	1-D4
	4-C2,C5
	5-B2,B6
	6-D6
	10-D5
D24:	1-D4
	2-D7
	3-B1,D1
	4-C2,C5
	5-B2,B6
	6-C6
	7-C8
	8-C6
	10-D5
D25:	1-D4
	2-D7
	3-B1,D1
	4-C2,C5
	5-B2,B6
	6-D6
	7-C8
	8-C6
	10-D5
D26:	1-D4
	2-D7
	3-B1,D1
	4-C2,C5
	5-B2,B6
	6-D6
	7-C8
	8-C6
	10-D5
D27:	1-D3
	2-D7
	3-B1,D1
	4-C2,C5
	5-B2,B6
	6-D6
	7-C8
	8-C6
	10-D5
D28:	1-D3
	2-D7
	3-B1,D1
	4-C2,C5
	5-B2,B6
	6-D6
	7-C8
	8-C6
	10-D5
D29:	1-D3
	2-D7
	3-B1,D1
	4-C2,C5
	5-B2,B6
	6-D6
	7-C8
	8-C6
	10-D5
D30:	1-D3
	2-D7
	3-C1,D1
	4-B2,B5
	5-B2,B6
	6-D6
	7-C8
	8-C6
	10-D5
D31:	1-D3
	2-D7
	3-C1,D1
	4-B2,B5
	5-B2,B6
	6-D6
	7-C8
	8-C6
	10-D5
DAS_RESET*:	2-D2
	11-B3
DAS_RXD:	1-D1
	11-B3
DAS_TXD:	1-D1
	11-B3
DISPLAY_ON/OFF*:	2-B2
	11-B8
DK0*:	1-A2
	2-C8
	10-C2
DK1*:	1-A2
	2-C8
	10-C2
DRAM_RAS1*:	1-C1
	5-B8,C8
DRAM_RAS2*:	1-B1
	5-B4,C4
DS*:	1-A2
	2-C7
	10-B8
	11-C3
D_BP_ZERO_ALL*:	1-B7
	2-B8
D_DSPL_ON/OFF*:	1-B7
	2-B8
D_GRAPH_GO/STOP*:	1-B7
	2-B8
D_NBP_GO/STOP*:	1-B7
	2-B8
D_SILENCE_ALARM*:	1-B7
	2-B8
D_TRIM_0:	1-B7
	2-B8
D_TRIM_1:	1-B7
	2-B8
D_TRIM_PUSH*:	1-B7
	2-B8
EE_CLK:	1-C6
	3-C6
EE_DATA:	1-C6
	3-D6
ETCO2_IRQ3*:	1-C1
	10-B2
ETCO2_RXD:	1-C7
	10-B2
ETCO2_TXD:	1-C7
	10-B2
ETH_CLSN:	1-B7
	9-C8
ETH_LOOP:	1-C7
	9-C8
ETH_RXD:	1-D1
	9-D8
ETH_RXD_CLK:	1-D1
	9-D8
ETH_RX_EN:	1-B7
	9-D8
ETH_TXD:	1-D1
	9-C8
ETH_TXD_CLK:	1-C1
	9-C8
ETH_TX_EN:	1-C7
	9-C8
FLASH_CS4*:	1-B1
	4-B2
FLASH_WE1*:	2-C2
	4-B2,B5
	10-C2
FLASH_WP*:	2-D2
	4-B4,B8
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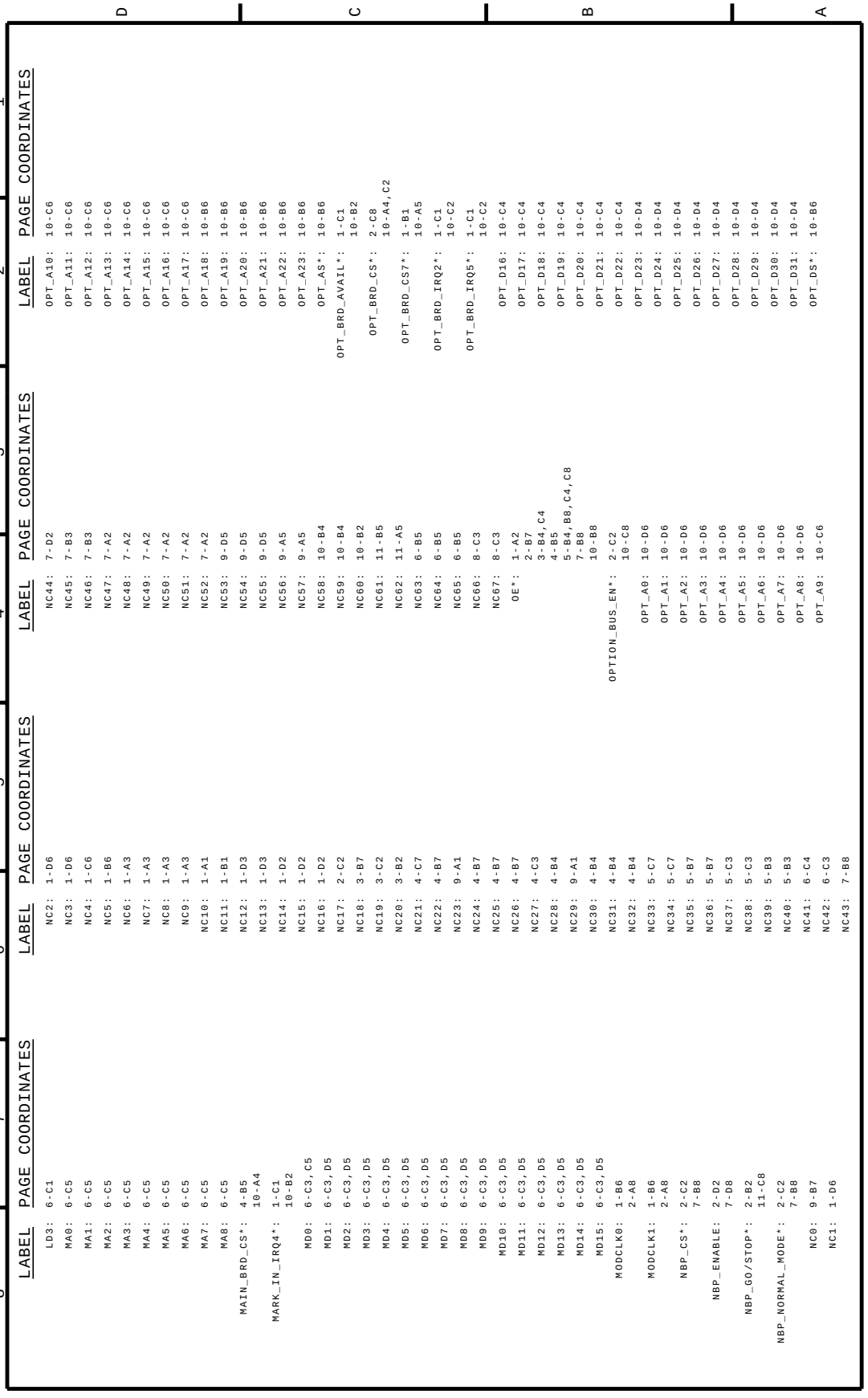
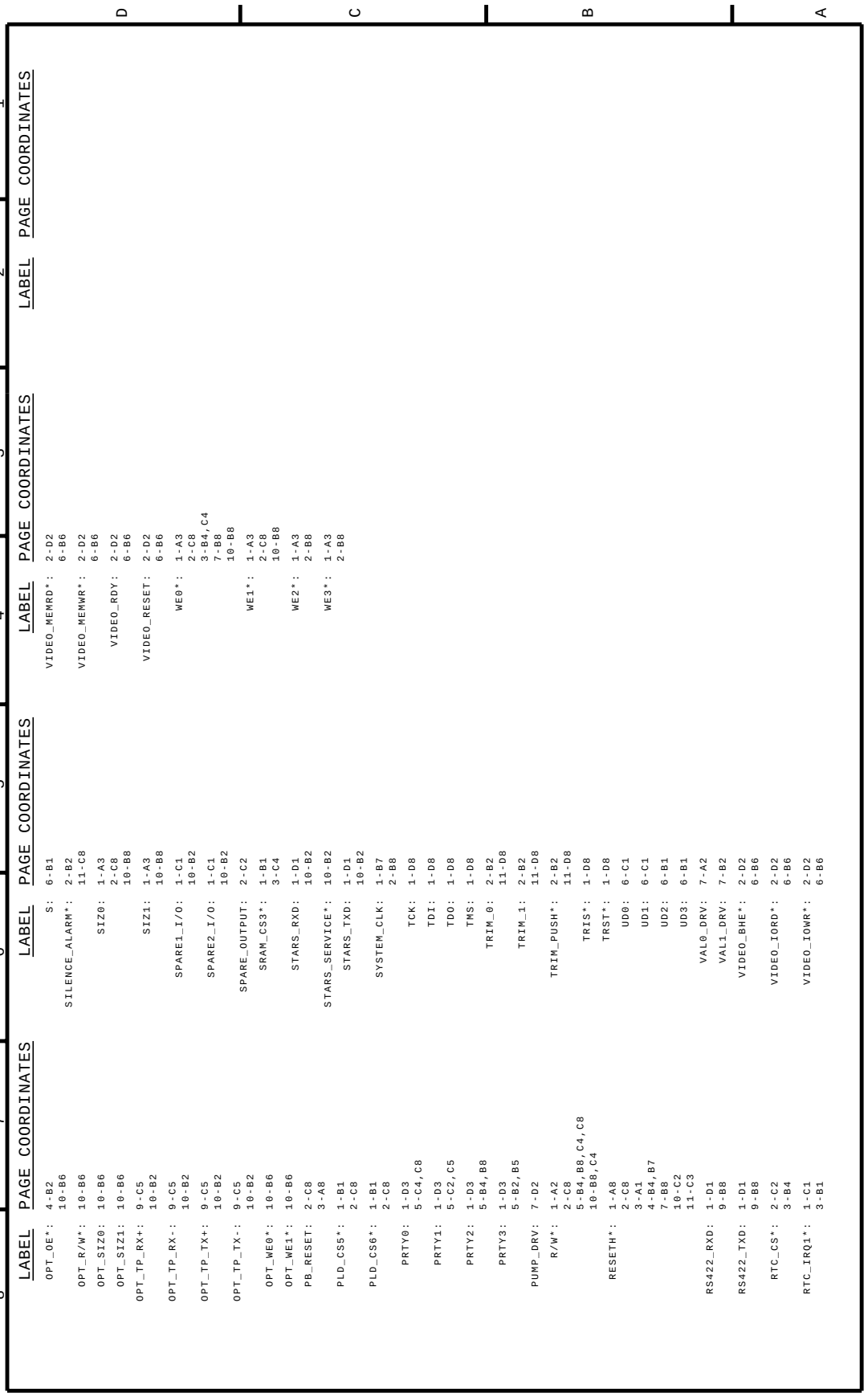
	2-A8
	11-D4
GRAPH_GO/STOP*:	2-B2
	11-C8
IFETCH/DSI:	1-B1
	11-D4
IPIPE0/DSO:	1-B1
	11-D4
LD0:	6-C1
LD1:	6-C1
LD2:	6-C1



LABEL	PAGE COORDINATES
LD3:	6-C1
MA0:	6-C5
MA1:	6-C5
MA2:	6-C5
MA3:	6-C5
MA4:	6-C5
MA5:	6-C5
MA6:	6-C5
MA7:	6-C5
MA8:	6-C5
MAIN_BRD_CS*:	4-B5
	10-A4
MARK_IN_IRQ4*:	1-C1
	10-B2
MD0:	6-C3,C5
MD1:	6-C3,D5
MD2:	6-C3,D5
MD3:	6-C3,D5
MD4:	6-C3,D5
MD5:	6-C3,D5
MD6:	6-C3,D5
MD7:	6-C3,D5
MD8:	6-C3,D5
MD9:	6-C3,D5
MD10:	6-C3,D5
MD11:	6-C3,D5
MD12:	6-C3,D5
MD13:	6-C3,D5
MD14:	6-C3,D5
MD15:	6-C3,D5
MODCLK0:	1-B6
	2-A8
MODCLK1:	1-B6
	2-A8
NBP_CS*:	2-C2
	7-B8
NBP_ENABLE:	2-D2
	7-D8
NBP_GO/STOP*:	2-B2
	11-C8
NBP_NORMAL_MODE*:	2-C2
	7-B8
NC0:	9-B7
NC1:	1-D6
NC2:	1-D6
NC3:	1-D6
NC4:	1-C6
NC5:	1-B6
NC6:	1-A3
NC7:	1-A3
NC8:	1-A3
NC9:	1-A3
NC10:	1-A1
NC11:	1-B1
NC12:	1-D3
NC13:	1-D3
NC14:	1-D2
NC15:	1-D2
NC16:	1-D2
NC17:	2-C2
NC18:	3-B7
NC19:	3-C2
NC20:	3-B2
NC21:	4-C7
NC22:	4-B7
NC23:	9-A1
NC24:	4-B7
NC25:	4-B7
NC26:	4-B7
NC27:	4-C3
NC28:	4-B4
NC29:	9-A1
NC30:	4-B4
NC31:	4-B4
NC32:	4-B4
NC33:	5-C7
NC34:	5-C7
NC35:	5-B7
NC36:	5-B7
NC37:	5-C3
NC38:	5-C3
NC39:	5-B3
NC40:	5-B3
NC41:	6-C4
NC42:	6-C3
NC43:	7-B8
NC44:	7-D2
NC45:	7-B3
NC46:	7-B3
NC47:	7-A2
NC48:	7-A2
NC49:	7-A2
NC50:	7-A2
NC51:	7-A2
NC52:	7-A2
NC53:	9-D5
NC54:	9-D5
NC55:	9-D5
NC56:	9-A5
NC57:	9-A5
NC58:	10-B4
NC59:	10-B4
NC60:	10-B2
NC61:	11-B5
NC62:	11-A5
NC63:	6-B5
NC64:	6-B5
NC65:	6-B5
NC66:	8-C3
NC67:	8-C3
OE*:	1-A2
	2-B7
	3-B4,C4
	4-B5
	5-B4,B8,C4,C8
	7-B8
	10-B8
OPTION_BUS_EN*:	2-C2
	10-C8
OPT_A0:	10-D6
OPT_A1:	10-D6
OPT_A2:	10-D6
OPT_A3:	10-D6
OPT_A4:	10-D6
OPT_A5:	10-D6
OPT_A6:	10-D6
OPT_A7:	10-D6
OPT_A8:	10-D6
OPT_A9:	10-C6
OPT_A10:	10-C6
OPT_A11:	10-C6
OPT_A12:	10-C6
OPT_A13:	10-C6
OPT_A14:	10-C6
OPT_A15:	10-C6
OPT_A16:	10-C6
OPT_A17:	10-C6
OPT_A18:	10-B6
OPT_A19:	10-B6
OPT_A20:	10-B6
OPT_A21:	10-B6
OPT_A22:	10-B6
OPT_A23:	10-B6
OPT_AS*:	10-B6
OPT_BRD_AVAIL*:	1-C1
	10-B2
OPT_BRD_CS*:	2-C8
	10-A4,C2
OPT_BRD_CS7*:	1-B1
	10-A5
OPT_BRD_IRQ2*:	1-C1
	10-C2
OPT_BRD_IRQ5*:	1-C1
	10-C2
OPT_D16:	10-C4
OPT_D17:	10-C4
OPT_D18:	10-C4
OPT_D19:	10-C4
OPT_D20:	10-C4
OPT_D21:	10-C4
OPT_D22:	10-C4
OPT_D23:	10-D4
OPT_D24:	10-D4
OPT_D25:	10-D4
OPT_D26:	10-D4
OPT_D27:	10-D4
OPT_D28:	10-D4
OPT_D29:	10-D4
OPT_D30:	10-D4
OPT_D31:	10-D4
OPT_DS*:	10-B6



LABEL	PAGE COORDINATES
OPT_OE*:	4-B2 10-B6
OPT_R/W*:	10-B6
OPT_SIZ0:	10-B6
OPT_SIZ1:	10-B6
OPT_TP_RX+:	9-C5 10-B2
OPT_TP_RX-:	9-C5 10-B2
OPT_TP_TX+:	9-C5 10-B2
OPT_TP_TX-:	9-C5 10-B2
OPT_WE0*:	10-B6
OPT_WE1*:	10-B6
PB_RESET:	2-C8 3-A8
PLD_CS5*:	1-B1 2-C8
PLD_CS6*:	1-B1 2-C8
PRTY0:	1-D3 5-C4,C8
PRTY1:	1-D3 5-C2,C5
PRTY2:	1-D3 5-B4,B8
PRTY3:	1-D3 5-B2,B5
PUMP_DRV:	7-D2
R/W*:	1-A2 2-C8 5-B4,B8,C4,C8 10-B8,C4
RESETH*:	1-A8 2-C8 3-A1 4-B4,B7 7-B8 10-C2 11-C3
RS422_RXD:	1-D1 9-B8
RS422_TXD:	1-D1 9-B8
RTC_CS*:	2-C2 3-B4
RTC_IRQ1*:	1-C1 3-B1
S:	6-B1
SILENCE_ALARM*:	2-B2 11-C8
SIZ0:	1-A3 2-C8 10-B8
SIZ1:	1-A3 10-B8
SPARE1_I/O:	1-C1 10-B2
SPARE2_I/O:	1-C1 10-B2
SPARE_OUTPUT:	2-C2
SRAM_CS3*:	1-B1 3-C4
STARS_RXD:	1-D1 10-B2
STARS_SERVICE*:	10-B2
STARS_TXD:	1-D1 10-B2
SYSTEM_CLK:	1-B7 2-B8
TCK:	1-D8
TDI:	1-D8
TDO:	1-D8
TMS:	1-D8
TRIM_0:	2-B2 11-D8
TRIM_1:	2-B2 11-D8
TRIM_PUSH*:	2-B2 11-D8
TRIS*:	1-D8
TRST*:	1-D8
UD0:	6-C1
UD1:	6-C1
UD2:	6-B1
UD3:	6-B1
VAL0_DRV:	7-A2
VAL1_DRV:	7-B2
VIDEO_BHE*:	2-D2 6-B6
VIDEO_IORD*:	2-D2 6-B6
VIDEO_IOWR*:	2-D2 6-B6
VIDEO_MEMRD*:	2-D2 6-B6
VIDEO_MEMWR*:	2-D2 6-B6
VIDEO_RDY:	2-D2 6-B6
VIDEO_RESET:	2-D2 6-B6
WE0*:	1-A3 2-C8 3-B4,C4 7-B8 10-B8
WE1*:	1-A3 2-C8 10-B8
WE2*:	1-A3 2-B8
WE3*:	1-A3 2-B8

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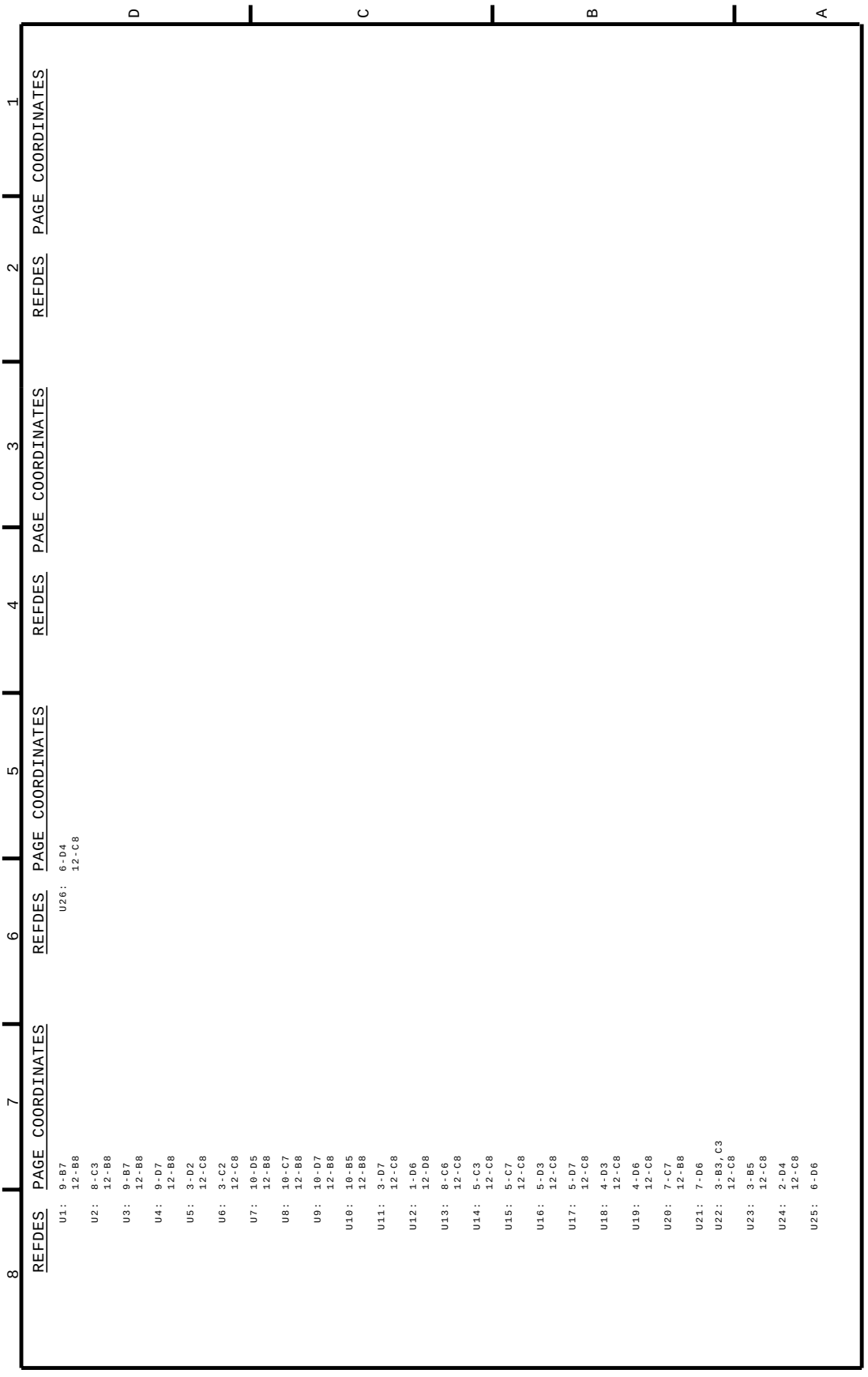
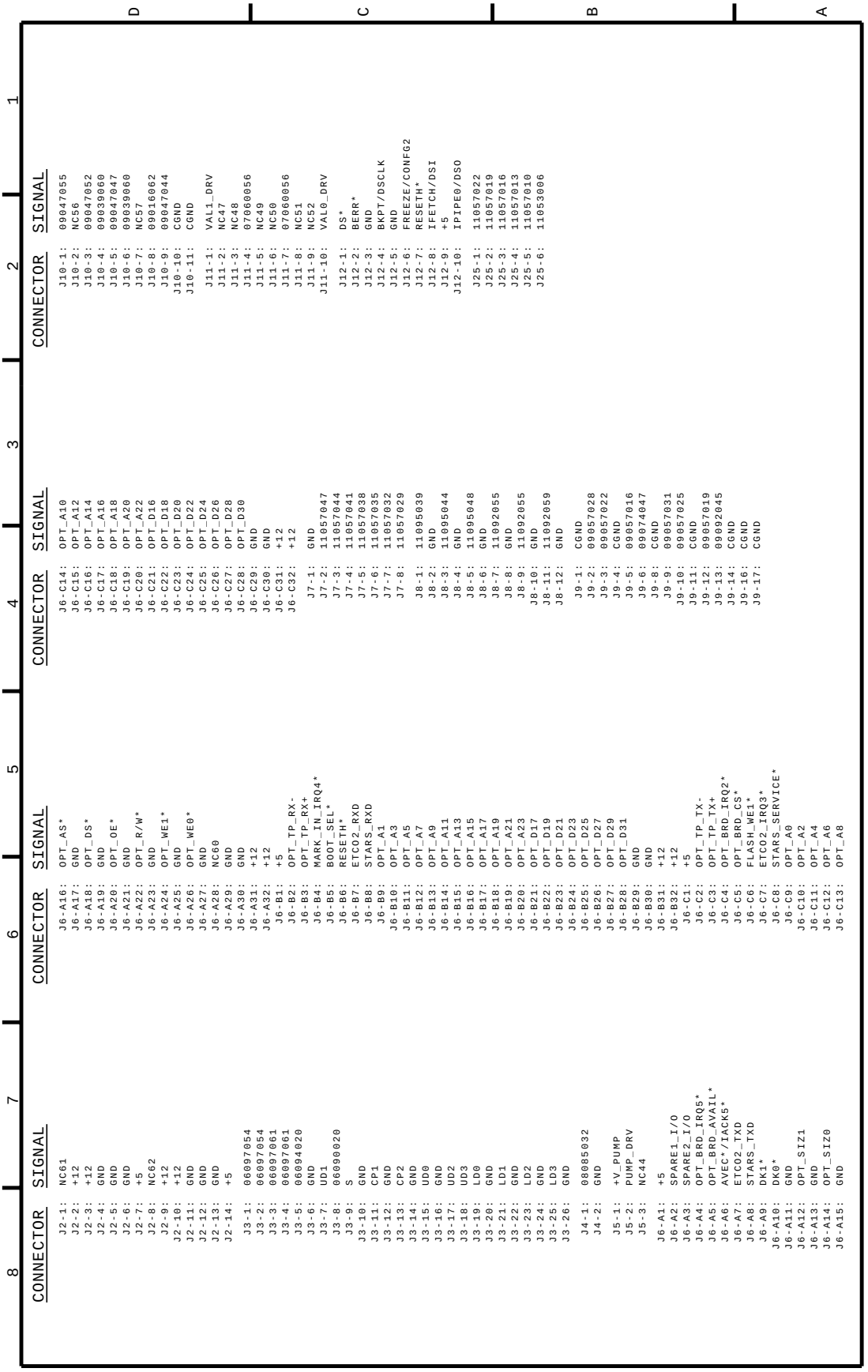

D
C
B
A
1
2
3
4
5
6
7
8
REFDES PAGE COORDINATES
U1: 9-B7 12-B8
U2: 8-C3 12-B8
U3: 9-B7 12-B8
U4: 9-D7 12-B8
U5: 3-D2 12-C8
U6: 3-C2 12-C8
U7: 10-D5 12-B8
U8: 10-C7 12-B8
U9: 10-D7 12-B8
U10: 10-B5 12-B8
U11: 3-D7 12-C8
U12: 1-D6 12-D8
U13: 8-C6 12-C8
U14: 5-C3 12-C8
U15: 5-C7 12-C8
U16: 5-D3 12-C8
U17: 5-D7 12-C8
U18: 4-D3 12-C8
U19: 4-D6 12-C8
U20: 7-C7 12-B8
U21: 7-D6
U22: 3-B3,C3 12-C8
U23: 3-B5 12-C8
U24: 2-D4 12-C8
U25: 6-D6
REFDES PAGE COORDINATES
U26: 6-D4 12-C8



CONNECTOR	SIGNAL
J2-1:	NC61
J2-2:	+12
J2-3:	+12
J2-4:	GND
J2-5:	GND
J2-6:	GND
J2-7:	+5
J2-8:	NC62
J2-9:	+12
J2-10:	+12
J2-11:	GND
J2-12:	GND
J2-13:	GND
J2-14:	+5
J3-1:	06097054
J3-2:	06097054
J3-3:	06097061
J3-4:	06097061
J3-5:	06094020
J3-6:	GND
J3-7:	UD1
J3-8:	06090020
J3-9:	S
J3-10:	GND
J3-11:	CP1
J3-12:	GND
J3-13:	CP2
J3-14:	GND
J3-15:	UD0
J3-16:	GND
J3-17:	UD2
J3-18:	UD3
J3-19:	LD0
J3-20:	GND
J3-21:	LD1
J3-22:	GND
J3-23:	LD2
J3-24:	GND
J3-25:	LD3
J3-26:	GND
J4-1:	00085032
J4-2:	GND
J5-1:	+V_PUMP
J5-2:	PUMP_DRV
J5-3:	NC44
J6-A1:	+5
J6-A2:	SPARE1_I/O
J6-A3:	SPARE2_I/O
J6-A4:	OPT_BRD_IRQ5*
J6-A5:	OPT_BRD_AVAIL*
J6-A6:	AVEC*/IACK5*
J6-A7:	ETCO2_TXD
J6-A8:	STARS_TXD
J6-A9:	DK1*
J6-A10:	DK0*
J6-A11:	GND
J6-A12:	OPT_SIZ1
J6-A13:	GND
J6-A14:	OPT_SIZ0
J6-A15:	GND
J6-A16:	OPT_AS*
J6-A17:	GND
J6-A18:	OPT_DS*
J6-A19:	GND
J6-A20:	OPT_OE*
J6-A21:	GND
J6-A22:	OPT_R/W*
J6-A23:	GND
J6-A24:	OPT_WE1*
J6-A25:	GND
J6-A26:	OPT_WE0*
J6-A27:	GND
J6-A28:	NC60
J6-A29:	GND
J6-A30:	GND
J6-A31:	+12
J6-A32:	+12
J6-B1:	+5
J6-B2:	OPT_TP_RX-
J6-B3:	OPT_TP_RX+
J6-B4:	MARK_IN_IRQ4*
J6-B5:	BOOT_SEL*
J6-B6:	RESETH*
J6-B7:	ETCO2_RXD
J6-B8:	STARS_RXD
J6-B9:	OPT_A1
J6-B10:	OPT_A3
J6-B11:	OPT_A5
J6-B12:	OPT_A7
J6-B13:	OPT_A9
J6-B14:	OPT_A11
J6-B15:	OPT_A13
J6-B16:	OPT_A15
J6-B17:	OPT_A17
J6-B18:	OPT_A19
J6-B19:	OPT_A21
J6-B20:	OPT_A23
J6-B21:	OPT_D17
J6-B22:	OPT_D19
J6-B23:	OPT_D21
J6-B24:	OPT_D23
J6-B25:	OPT_D25
J6-B26:	OPT_D27
J6-B27:	OPT_D29
J6-B28:	OPT_D31
J6-B29:	GND
J6-B30:	GND
J6-B31:	+12
J6-B32:	+12
J6-C1:	+5
J6-C2:	OPT_TP_TX-
J6-C3:	OPT_TP_TX+
J6-C4:	OPT_BRD_IRQ2*
J6-C5:	OPT_BRD_CS*
J6-C6:	FLASH_WE1*
J6-C7:	ETCO2_IRQ3*
J6-C8:	STARS_SERVICE*
J6-C9:	OPT_A0
J6-C10:	OPT_A2
J6-C11:	OPT_A4
J6-C12:	OPT_A6
J6-C13:	OPT_A8
J6-C14:	OPT_A10
J6-C15:	OPT_A12
J6-C16:	OPT_A14
J6-C17:	OPT_A16
J6-C18:	OPT_A18
J6-C19:	OPT_A20
J6-C20:	OPT_A22
J6-C21:	OPT_D16
J6-C22:	OPT_D18
J6-C23:	OPT_D20
J6-C24:	OPT_D22
J6-C25:	OPT_D24
J6-C26:	OPT_D26
J6-C27:	OPT_D28
J6-C28:	OPT_D30
J6-C29:	GND
J6-C30:	GND
J6-C31:	+12
J6-C32:	+12
J7-1:	GND
J7-2:	11057047
J7-3:	11057044
J7-4:	11057041
J7-5:	11057038
J7-6:	11057035
J7-7:	11057032
J7-8:	11057029
J8-1:	11095039
J8-2:	GND
J8-3:	11095044
J8-4:	GND
J8-5:	11095048
J8-6:	GND
J8-7:	11092055
J8-8:	GND
J8-9:	11092055
J8-10:	GND
J8-11:	11092059
J8-12:	GND
J9-1:	CGND
J9-2:	09057028
J9-3:	09057022
J9-4:	CGND
J9-5:	09057016
J9-6:	09074047
J9-8:	CGND
J9-9:	09057031
J9-10:	09057025
J9-11:	CGND
J9-12:	09057019
J9-13:	09092045
J9-14:	CGND
J9-16:	CGND
J9-17:	CGND
J10-1:	09047055
J10-2:	NC56
J10-3:	09047052
J10-4:	09039060
J10-5:	09047047
J10-6:	09039060
J10-7:	NC57
J10-8:	09016062
J10-9:	09047044
J10-10:	CGND
J10-11:	CGND
J11-1:	VAL1_DRV
J11-2:	NC47
J11-3:	NC48
J11-4:	07060056
J11-5:	NC49
J11-6:	NC50
J11-7:	07060056
J11-8:	NC51
J11-9:	NC52
J11-10:	VAL0_DRV
J12-1:	DS*
J12-2:	BERR*
J12-3:	GND
J12-4:	BKPT/DSCLK
J12-5:	GND
J12-6:	FREEZE/CONF62
J12-7:	RESETH*
J12-8:	IFETCH/DSI
J12-9:	+5
J12-10:	IPIPE0/DSO
J25-1:	11057022
J25-2:	11057019
J25-3:	11057016
J25-4:	11057013
J25-5:	11057010
J25-6:	11053006

For your notes

3 POWER SUPPLY ASSEMBLY AND PCB

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Parts List PN 414641-001C 3-5

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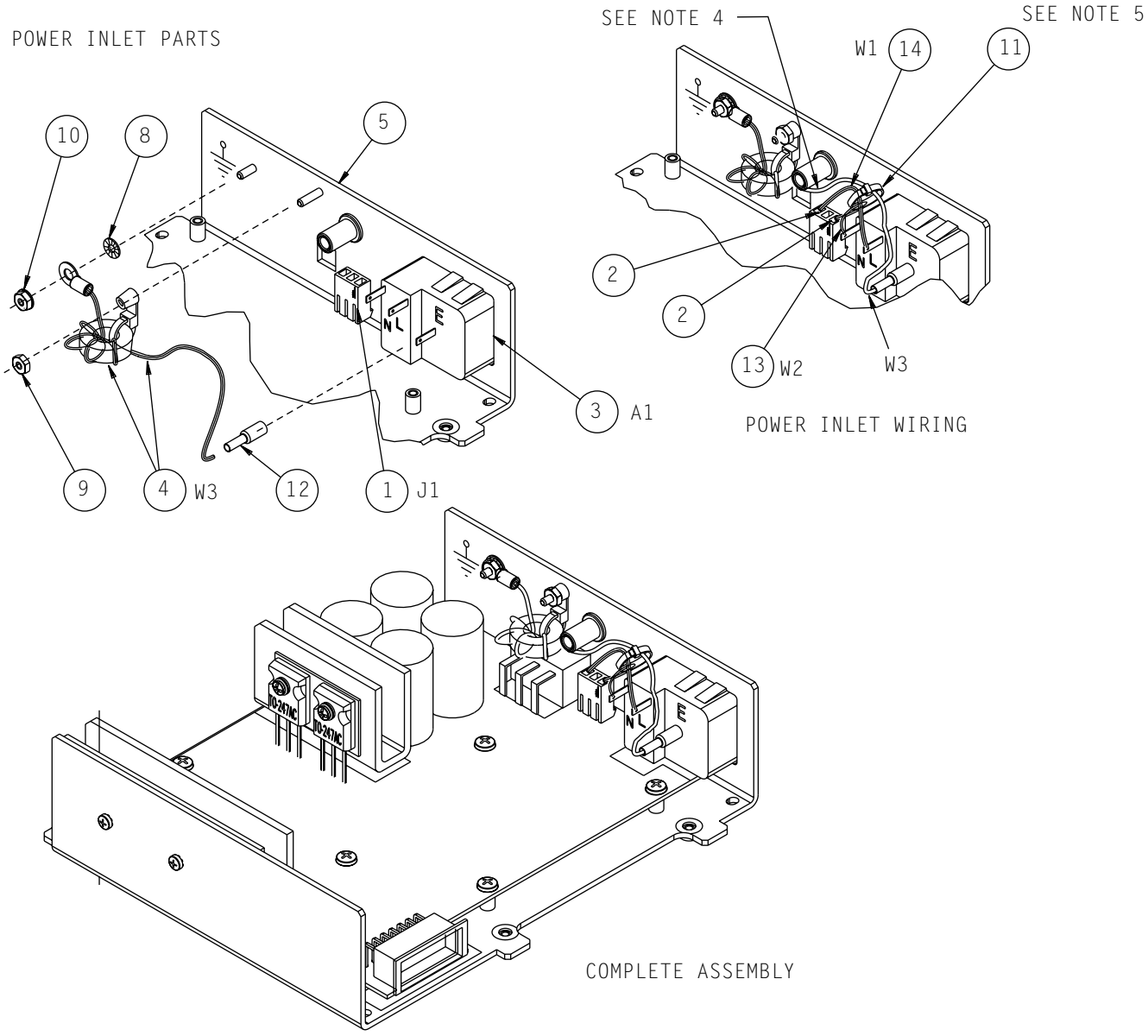
Schematic Diagram PN SD800706-001B 3-14

Introduction

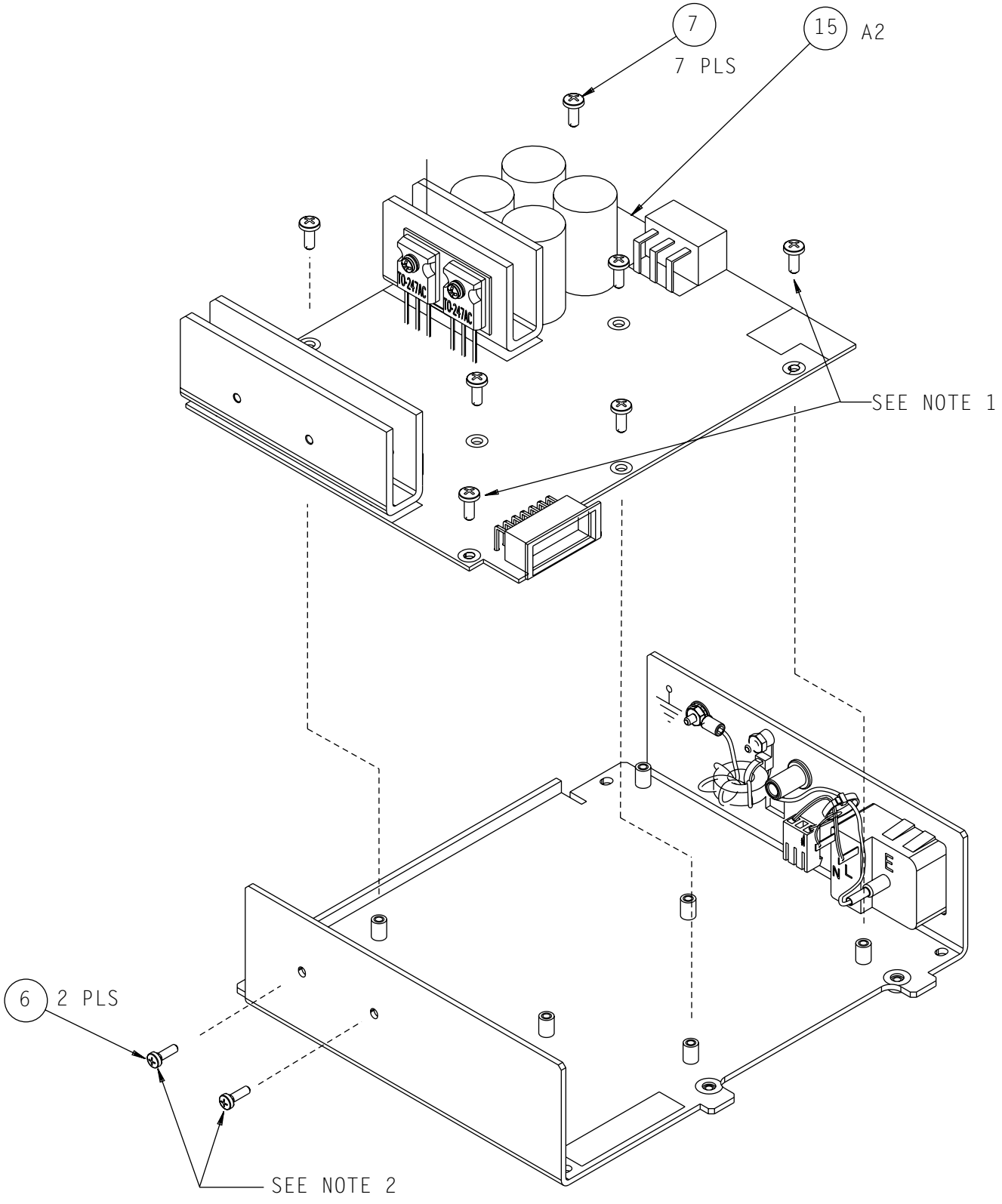
This chapter presents information about the power supply assembly, pn 414641-001C, and the power supply PCB, pn 800706-001C, used in the Eagle 3000 patient monitor.

Exploded View

PN 414641-001C



NOTES:
1. FIRST, INSTALL THE 2 INDICATED SCREWS (ITEM 7) FOR THE FIRST 2 THREADS ONLY.
2. SECOND, TIGHTEN NOTED HEAT SINK SCREWS (ITEM 6).
3. ASSEMBLE AND TIGHTEN ALL FASTENERS.
4. ROUTE WIRES BELOW THE THREADED INSERT AS SHOWN.
5. INSTALL TIE WRAP (ITEM 11) AROUND ALL 3 WIRES AND TIGHTEN TO HOLD THEM TOGETHER SECURELY.



PCB ASSEMBLY INSTALLATION

Parts List PN 414641-001C

Item	Reference Designation	Parts List	Part Number	Qty
1	J1	Connector, 3-Pin, w/Locks	1852-003	1
2		Contact, Connector, 18-24 AWG	1853-101	2
3	A1	Power Inlet Module	414629-002	1
4	W3	Choke Assembly, Ground Wire	415239-001	1
5		Bracket, Power Supply	415317-001	1
6		Screw, PNH, Phillips, 4-40 x 3/8	45000-406	2
7		Screw, BDGH, Phillips, 6-32 x 3/8	45074-612	7
8		Washer, Lock, External Tooth, No 4	4520-304	1
9		Nut, Hex, 4-40	4521-304	1
10		Nut, Keps, Hex, 4-40	4521-704	1
11		Tie Wrap	4535-001	1
12		Tubing, Heat Shrink, 3/16	4882-104	AR
13	W2	Wire, 18 AWG (Blue)	4888-006	AR
14	W1	Wire, 18 AWG (Brown)	4888-007	AR
15	A2	Main Power Supply PCB Assembly	800706-001	1

Switches and Controls PN 800706-001C

Listed below are all switches, controls, and LEDs found on the circuit board.

WARNING
Due to possible high voltage, always use an insulated screwdriver while making adjustments.

Table 3-1. Switches and Controls

Designator	Name	Function
R6	+12V ADJ	Adjust +12 main output voltage
R8	FREQ ADJ	Adjust supply operating frequency
R66	+5V ADJ	Adjust +5 output voltage
SW1	115V/230V	Line input range select

PCB Connectors PN 800706-001C

Pin-by-pin descriptions and the signal names for each internal PCB connector are described below.

Table 3-2. Connector J1 (3-Pin AC Mains Power Input Connector)

Pin	Name	Input/ Output	Description
1	NEUTRAL	I	AC mains power
2	NC		
3	LINE	I	AC mains power

Table 3-3. Connector J3 (14-Pin DC Output Connector)

Pin	Name	Input/ Output	Description
1	NC		
2	+12V	O	+12 V power output
3	+12V	O	+12 V power output
4	PWRGND	-	Common ground reference
5	PWRGND	-	Common ground reference
6	PWRGND	-	Common ground reference
7	+5V	O	+5 V power output
8	NC	-	
9	+12V	O	+12 V power output
10	+12V	O	+12 V power output
11	PWRGND	-	Common ground reference
12	PWRGND	-	Common ground reference
13	PWRGND	-	Common ground reference
14	+5V	O	+5 V power output

Parts Location Diagram PN 800706-001C

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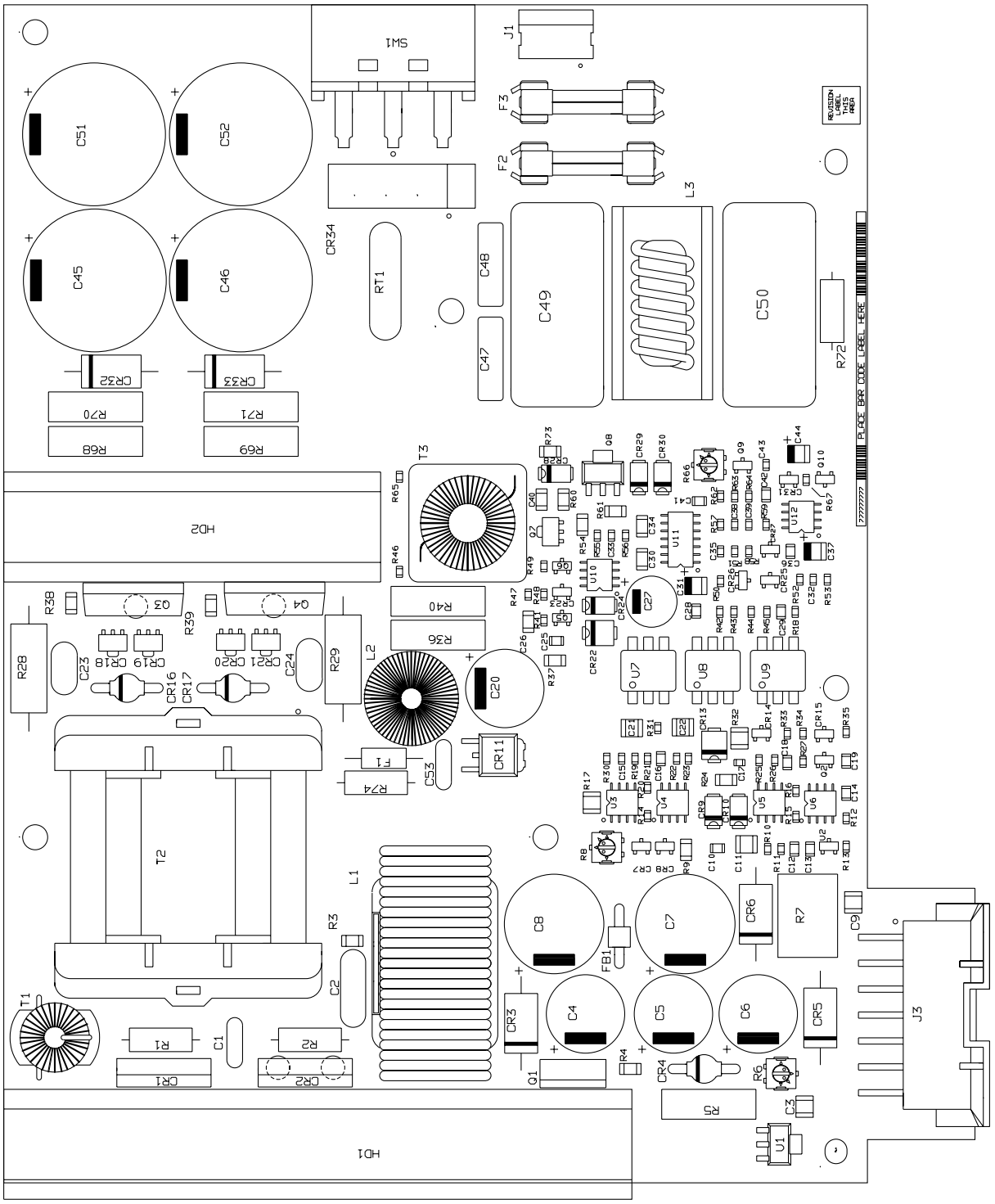
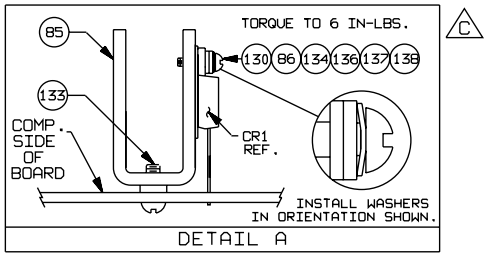
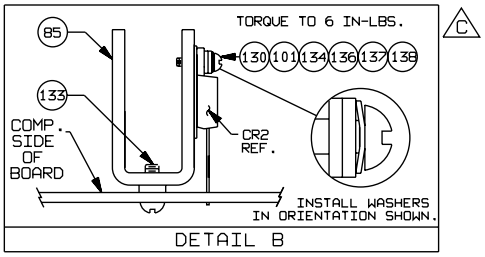
COMPONENT SIDE ASSEMBLY VIEW

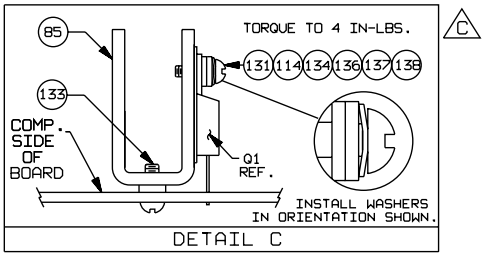




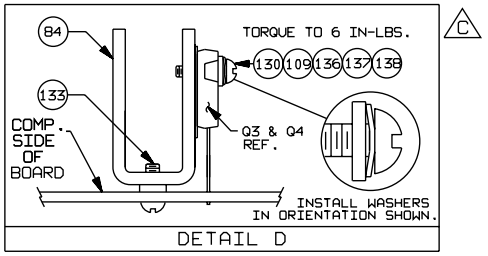
DETAIL A



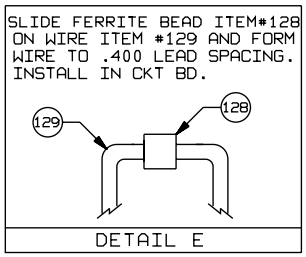
DETAIL B



DETAIL C



DETAIL D



DETAIL E

NOTES:

1. UNLESS OTHERWISE SPECIFIED, ALL RESISTANCE VALUES ARE IN OHMS, ALL CAPACITANCE VALUES ARE IN MICROFARADS.
2. THE BAR SHOWN ON ALL POLARIZED CAPACITORS DENOTES POSITIVE TERMINAL.
3. INSTALL FUSES F2 AND F3 (ITEM #22) AFTER WAVE SOLDERING.
4. (C) LEADS ON THE FOLLOWING COMPONENTS DO NOT REQUIRE TRIMMING: CR34, SW1 AND T3.

Parts List PN 800706-001C

Reference Designation	Description	Part Number	Qty
C1	Cap, Cer, Radial, 0.0022µF, 10%, 500V	415448-001	1
C2	Cap, Cer, 0.0022µF, 10%, 1KV	413874-001	1
C3, 9, 21, 22	Cap, Cer, 0.22µF, 5%, 50V, SM	1182-224	4
C4, 5, 6	Cap, Al, 1200µF, 20%, 16V	404316-002	3
C7, 8	Cap, Al, 2700µF, 20%, 25V	405258-003	2
C10	Cap, Cer, 470pF, 5%, 50V, SM	1181-471	1
C11	Cap, Cer, 0.01µF, 10%, 100V, SM	403029-001	1
C12, 13, 14, 16, 18, 19, 25, 36, 42	Cap, Cer, 0.1µF, 25V	410527-001	9
C15, 35	Cap, NPO, 10pF, +/-0.25pF	411576-010	2
C17	Cap, Cer, 560pF, 5%, 50V	411575-008	1
C20	Cap, Al, 820µF, 20%, 35V	404314-002	1
C23, 24	Cap, Cer, Radial, 220pF, 10%, 2KV	414163-001	2
C26, 30, 34	Cap, Cer, 0.1µF, 20%, 50V	404370-001	3
C27	Cap, AL, Radial, 100µF, 20%, 15V	413207-001	1
C28	Cap, Cer, 0.027µF, 5%, 50V, SM	1182-273	1
C29	Cap, Cer, X7R, 0.001µF, SM	1182-102	1
C31, 37, 44	Cap, Tant, 4.7µF, 20%, 10V, SM	1176-475	3
C32	Cap, Cer, 0.1µF, 5%, 16V	411575-002	1
C33, 43	Cap, Cer, 0.1µF, 5%, 50V, SM	411575-012	2
C38	Cap, Cer, 0.022µF, 5%, 16V, SM	411575-014	1
C39	Cap, Cer, 180pF, 5%, 50V	411575-011	1
C40	Cap, Cer, 0.033 µF, 5%, 50V, SM	1182-333	1
C41	Cap, Cer, 820 pF, 1%, 50V, SM	1183-682	1
C45, 46, 51, 52	Cap, Al, 330µF, 20%, 250V	413880-001	4
C47, 48	Cap, MPE, 2200pF, 20%, 250V	414311-001	2
C49, 50	Cap, MPE, 0.68µF, 20%, 250V	414980-001	2
C53	Cap, Cer, Radial, 680pF, 10%, 1kV	415572-001	1
CR1	Rectifier Pair, Schottky, 45V, 30A PBYR3045PT	412961-002	1
CR2	Rectifier Pair, 200V, 30A BYV72E-200	413898-001	1
CR3	Diode, Transient Voltage Supressor 1.5KE8.2A	414113-001	1
CR4, 16, 17	Bridge Rectifier, Diode, 3A, 600V BYW95C	414112-001	3
CR5	Diode, Transient Voltage Supressor, 6.8V, 5W 1N6267A	413456-001	1
CR6	Transient Voltage Suppressor, 16V, 10%, 1N6276	410936-001	1
CR7, 8, 23, 25, 26, 31	Diode Pair, Series, SM D7000	2013-201	6
CR9, 10, 24	Diode, Rectifier, 1A, 100V, SM MURS110T3	403190-001	3
CR11	Rectifier Pair, 200V, 3A, SM MURD620CTT4	408881-001	1
CR13	Diode, Zener, SM 1SMB5918BT3	414182-001	1
CR14, 27	Diode, Schottky, SM BAT54	401985-001	2
CR15	Diode, Zener, 6.4V, SM BZX84C6V8	403937-003	1

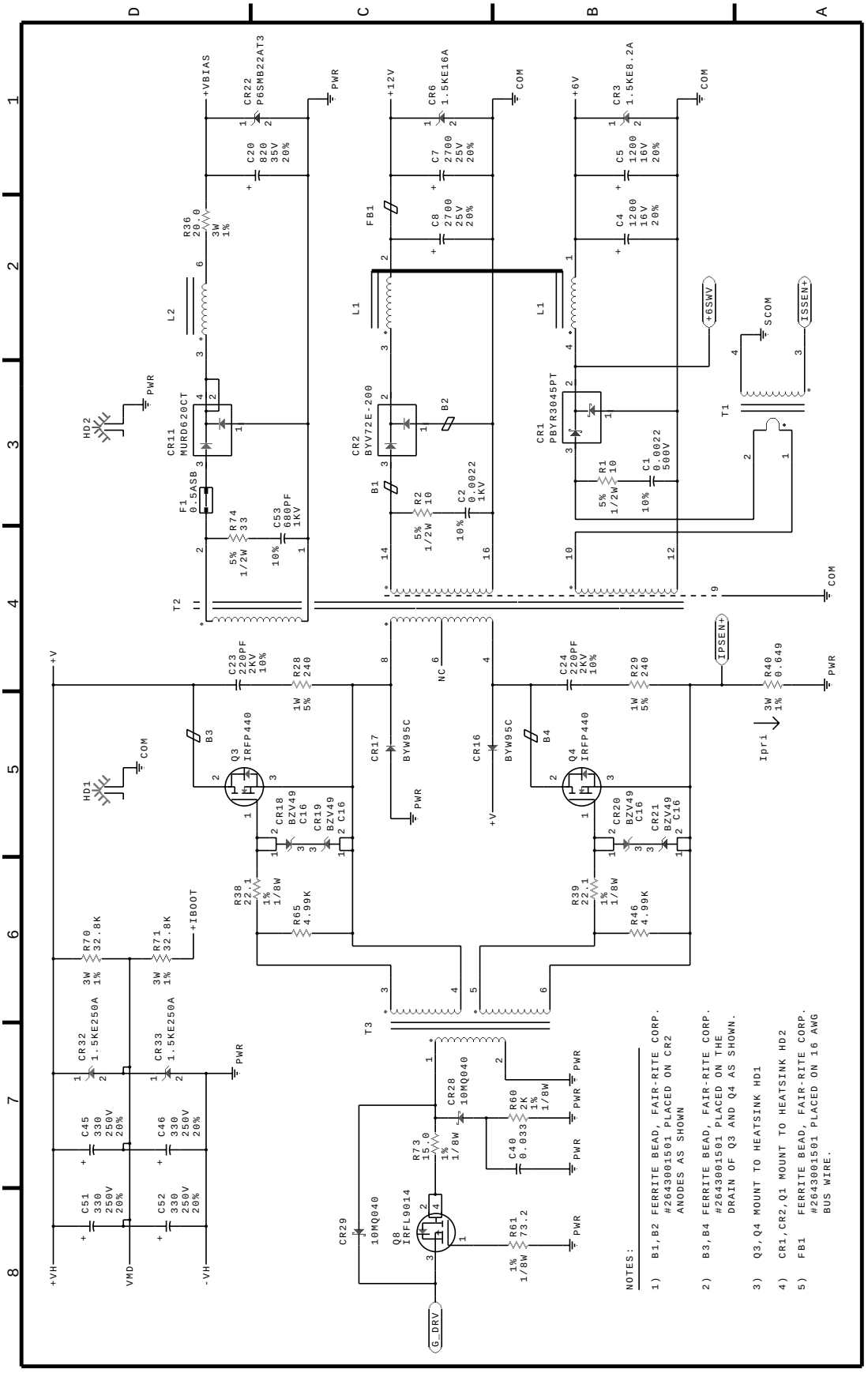
Reference Designation	Description	Part Number	Qty
CR18, 19, 20, 21	Diode, Zener, 16V, SM BZV49C16	414237-001	4
CR22	Diode, Transient Voltage Supressor, 22V SMB	414348-001	1
CR28, 29, 30	Diode, Schottky, Barrier, 1A, 40V, SM MBRS140T3	403187-001	3
CR32, 33	Diode, Transient Voltage Supressor 1.5KE250A	413901-001	2
CR34	Rectifier Bridge, 800V, 6A KBV8K	414020-001	1
F1	Fuse, 0.5A. SB, Pico-Axial	406911-007	1
F2, 3	Fuse, 4.0A, SB	1908-506	2
HD1	Heatsink, Secondary	412863-002	1
HD2	Heatsink, Primary	412863-001	1
J1	Connector, Header, 3-Postion	414397-001	1
J3	Connector, Header, Right Angle Minifit, BMI, 14-Pin	413798-001	1
L1	Inductor, Coupled, 2-Sec	413876-001	1
L2	Inductor, 3.3 mH	413877-001	1
L3	Inductor, Common Mode	414312-001	1
Q1	Transistor, PWR, PNP MJE1123	414123-001	1
Q2, 10	Transistor, NPN, SM T3904	2511-001	2
Q3, 4	Transistor, MOS-FET, N-Channel IRFP440	414064-001	1
Q5	Transistor, MOS-FET, N-Channel, SM 2N7002	402414-001	1
Q6	Transister, PNP, Low-Noise, SM	404942-001	1
Q7	Transistor, NPN, SM BCX56-1	2712-056	1
Q8	Transistor, MOS-FET, P-Channel IRFL9014	414065-001	1
Q9	Transistor, PNP, SM T3906	2511-101	1
R1, 2	Res, Comp, 10 Ω, 5%, 1/2W	1002-100	2
R3	Res, Cer, 249 Ω, 1%, 1/8W, SM	1082-793	1
R4	Res, Cer, 332 Ω, 1%, 1/8W, SM	1082-884	1
R5, 36	Res, PWR, MF, 20 Ω, 1%, 3W	413730-004	2
R6	Res, Var, 1K, Vert, Top-Adjust	403938-003	1
R7	Res, Power, Standup, 75Ω, 5%, 5W	414063-001	1
R8, 66	Res, Var, 2K, Top Adjust	403938-001	2
R9	Res, Cer, 619 Ω, 1%, 1/8W, SM	1082-866	1
R10	Res, Cer, 45.7K, 1%, 1/16W, SM	410334-036	1
R11, 12, 16, 35, 58	Res, Cer, 10K, 1%, 1/16W, SM	410334-013	5
R13	Res, Cer, 9.09K, 1%, 1/16W, SM	410334-012	1
R14	Res, Cer, 17.8K, 1%, 1/16W, SM	410334-088	1
R15, 46, 53, 65	Res, Cer, 4.99K, 1%, 1/16W, SM	410334-066	4
R17	Res, Cer, 330Ω, 5%, 1/4W	415169-001	1
R18, 64	Res, Cer, 2K, 1%, 1/16W, SM	410334-009	2
R19, 25	Res, Cer, 49.9K, 1%, 1/16W, SM	410334-094	2
R20, 21	Res, Cer, 6.49K, 1%, 1/16W, SM	410334-083	2
R22, 45, 48	Res, Cer, 1K, 1%, 1/16W, SM	410334-008	3
R23	Res, Cer, 301Ω, 1%, 1/16W, SM	410334-073	1
R24	Res, Cer, 10K, 1%, 1/8W, SM	1082-104	1
R26, 50, 63	Res, Cer, 100Ω, 1%, 1/16W, SM	410334-003	3

Reference Designation	Description	Part Number	Qty
R27	Res, Cer, 35.7K, 1%, 1/16W, SM	410334-091	1
R28, 29	Res, Comp, 240 Ω, 5%, 1W	1003-241	2
R30	Res, Cer, 511 Ω, 1%, 1/16W, SM	410334-034	1
R31	Res, Cer, 4.42K, 1%, 1/16W, SM	410334-093	1
R32	Res, Cer, 68.1K, 1%, 1/4W, SM	407468-013	1
R33, 34, 44	Res, Cer, 619 Ω, 1%, 1/16W, SM	410334-092	3
R37	Res, Cer, 100Ω, 1%, 1/8W, SM	1082-755	1
R38, 39	Res, Cer, 22.1Ω, 1%, 1/8W, SM	1082-804	2
R40	Res, PWR, MF, 0.649 Ω, 1%, 3W	413730-005	1
R41	Res, Cer, 100K, 1%, 1/16W, SM	410334-019	1
R42	Res, Cer, 30.1Ω, 1%, 1/16W, SM	410334-109	1
R43	Res, Cer, 3.01K, 1%, 1/16W, SM	410334-018	1
R47	Res, Cer, 23.7K, 1%, 1/16W, SM	410334-108	1
R49, 59	Res, Cer, 20.0K, 1%, 1/16W, SM	410334-053	2
R51	Res, Cer, 30.1K, 1%, 1/16W, SM	410334-095	1
R52	Res, Cer, 1.50K, 1%, 1/16W, SM	410334-080	1
R54	Res, Cer, 1K, 1%, 1/8W, SM	1082-103	1
R55, 57	Res, Cer, 22.6K, 1%, 1/16W, SM	410334-089	2
R56	Res, Cer, 200K, 1%, 1/16W, SM	410334-022	1
R60	Res, Cer, 2K, 1%, 1/8W, SM	1082-201	1
R61	Res, Cer, 73.2 Ω, 1%, 1/8W, SM	1082-848	1
R62	Res, Cer, 6.19K, 1%, 1/16W, SM	410334-121	1
R67	Res, Cer, 21.5K, 1%, 1/16W, SM	410334-086	1
R68, 69	Res, PWR, MF, 150K, 1%, 3W	413730-002	2
R70, 71	Res, PWR, MF, 12.8K, 1%, 3W	413730-001	2
R72	Res, Comp, 330K, 5%, 1/2W	1002-334	1
R73	Res, Cer, 15 Ω, 1%, 1/8W, SM	1082-811	1
R74	Res, Comp, 33 Ω, 5%, 1/2W	1002-330	1
RT1	Thermistor, 2.5Ω, 8A	406067-004	1
SW1	Switch, Slide, DPDT, 115-230V	414010-001	1
T1	Transformer, Current Sense	413879-001	1
T2	Transformer, Power, High Frequency	413881-001	1
T3	Transformer, Gate Drive	413878-001	1
U1	Volt Rgltr, +5V, SM LT1123CST	412454-002	1
U2	Voltage Reference, Shunt, SM LM4040	411568-002	1
U3, 4	Volt Rgltr, SM TL431ACD	403046-001	2
U5, 6	Volt Comparator, Dual LM393	3144-393	2
U7, 9	Isolator, Optically Coupled MOC8102T	413900-001	2
U8	Isolator, Optically Coupled MOC3012T	414023-001	1
U10	Volt Rgltr, Adj, SM LP2951A	3076-001	1
U11	Pulse Width Modulator, SM VC3844AD	413899-001	1
U12	Timer, SM LM555CM	414116-001	1
–	Ferrite Bead (item 128 for leads 1 and 3 of CR2, for center lead of Q3 and Q4, and for wire, item 129)	411169-001	5

Reference Designation	Description	Part Number	Qty
–	Wire Bus, 16 AWG (item 129)	4900-010	1
–	Pad, Silicon (item 130 for CR1, CR2, Q3, and Q4)	414630-001	2
–	Insulator, TO220 (item 131 for Q1)	3952-006	1
–	Screw, PNH, Phillips, SST, 6-32 x 3/8 (item 133 for CR1, CR2, Q1, Q3, and Q4)	4502-612	4
–	Washer, Shoulder, Nylon (item 134 for CR1, CR2, and Q1)	4538-104	3
–	Holder, Fuse Clip (item 135 for F3)	401181-001	4
–	Washer, Flat, SST, No 4 (item 136 for CR1, CR2, Q1, Q3, and Q4)	4520-004	5
–	Washer, Belleville (item 137 for CR1, CR2, Q1, Q3, and Q4)	4550-806	5
–	Screw, PNH, Phillips, SST, 4-40 x 3/8 (item 138 for CR1, CR2, Q1, Q3, and Q4)	4502-412	5
–	Circuit Board	800707-001	1
–	Schematic Diagram	SD800706-001B	1

Schematic Diagram PN SD800706-001B

1 of 6



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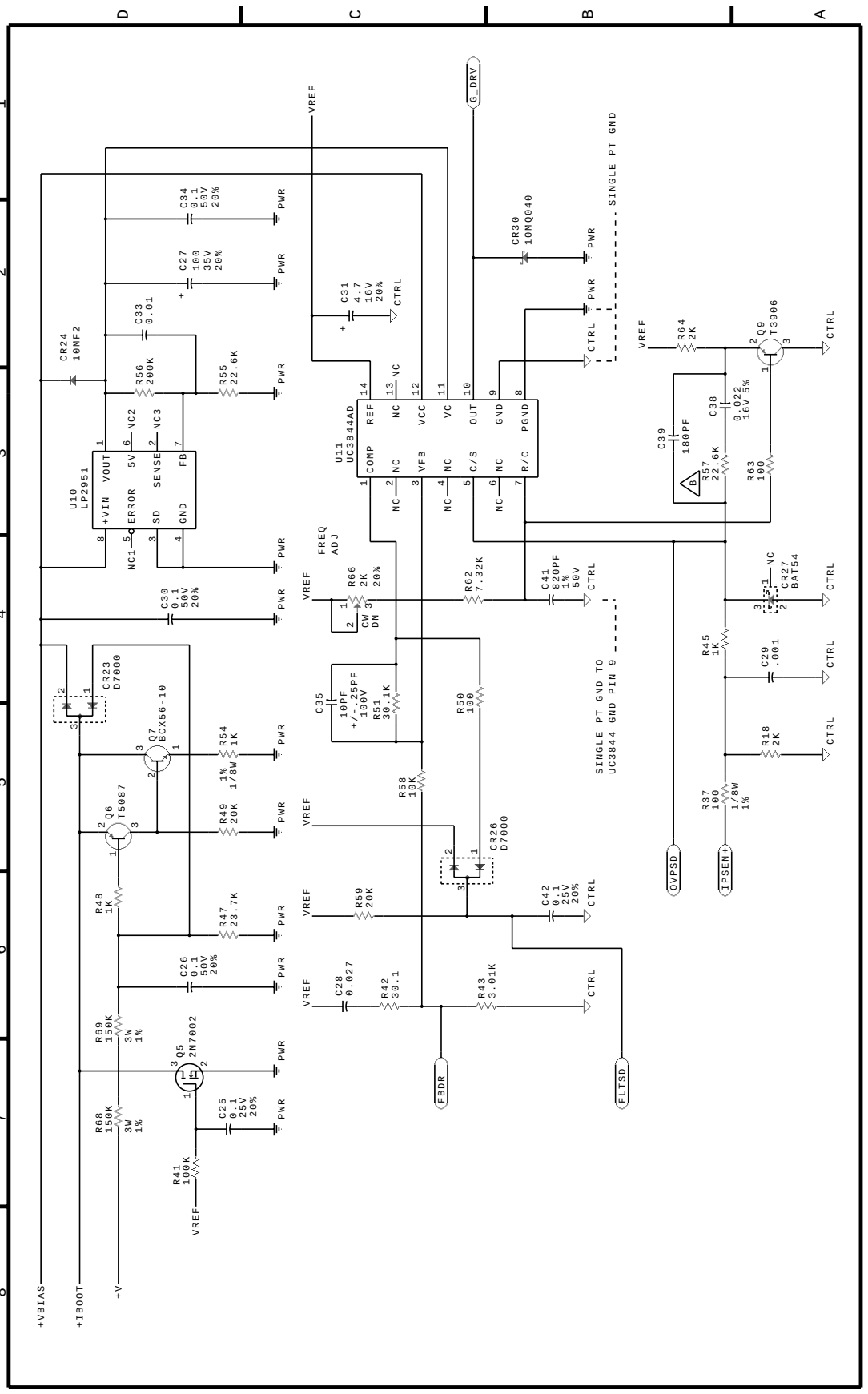
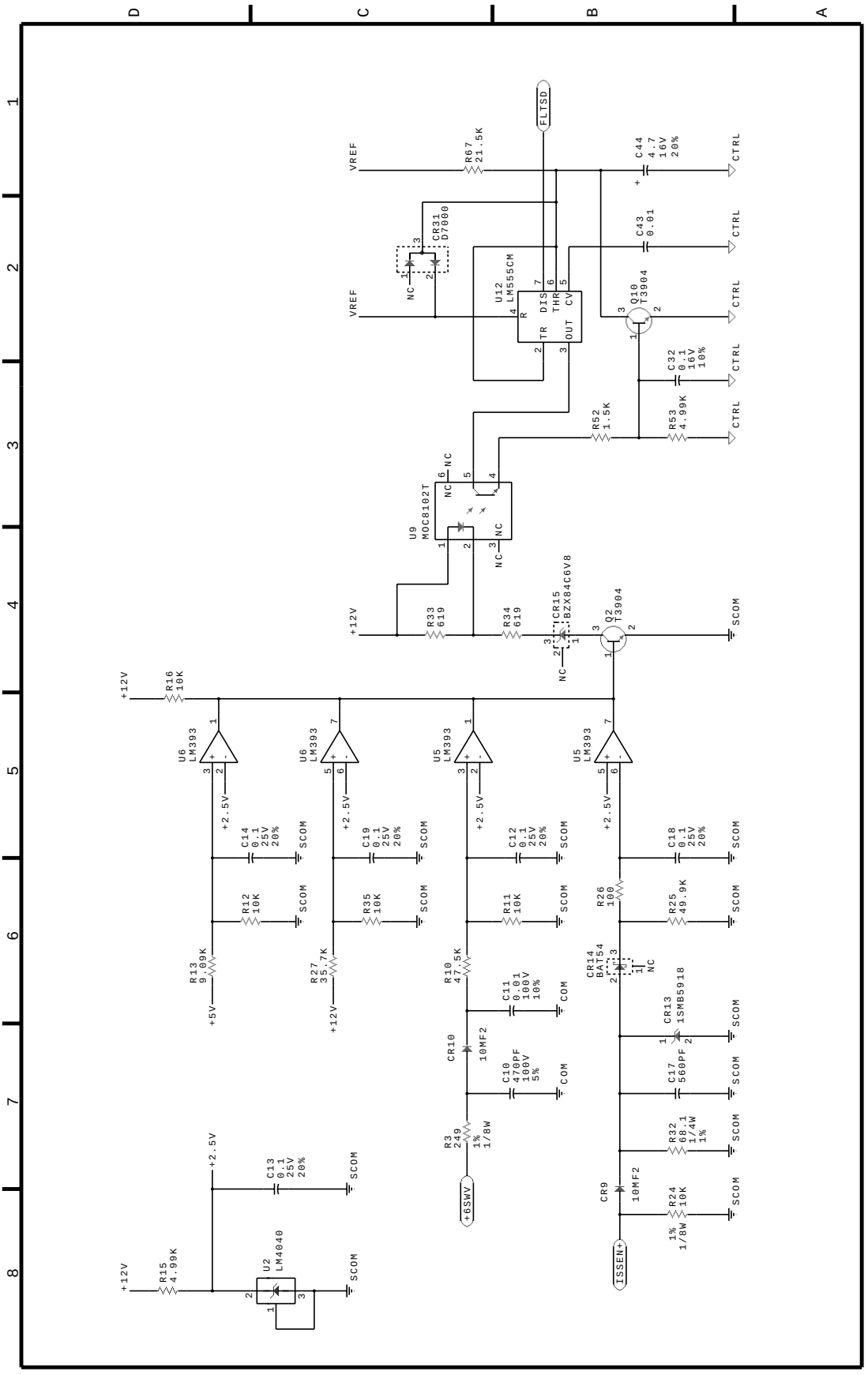
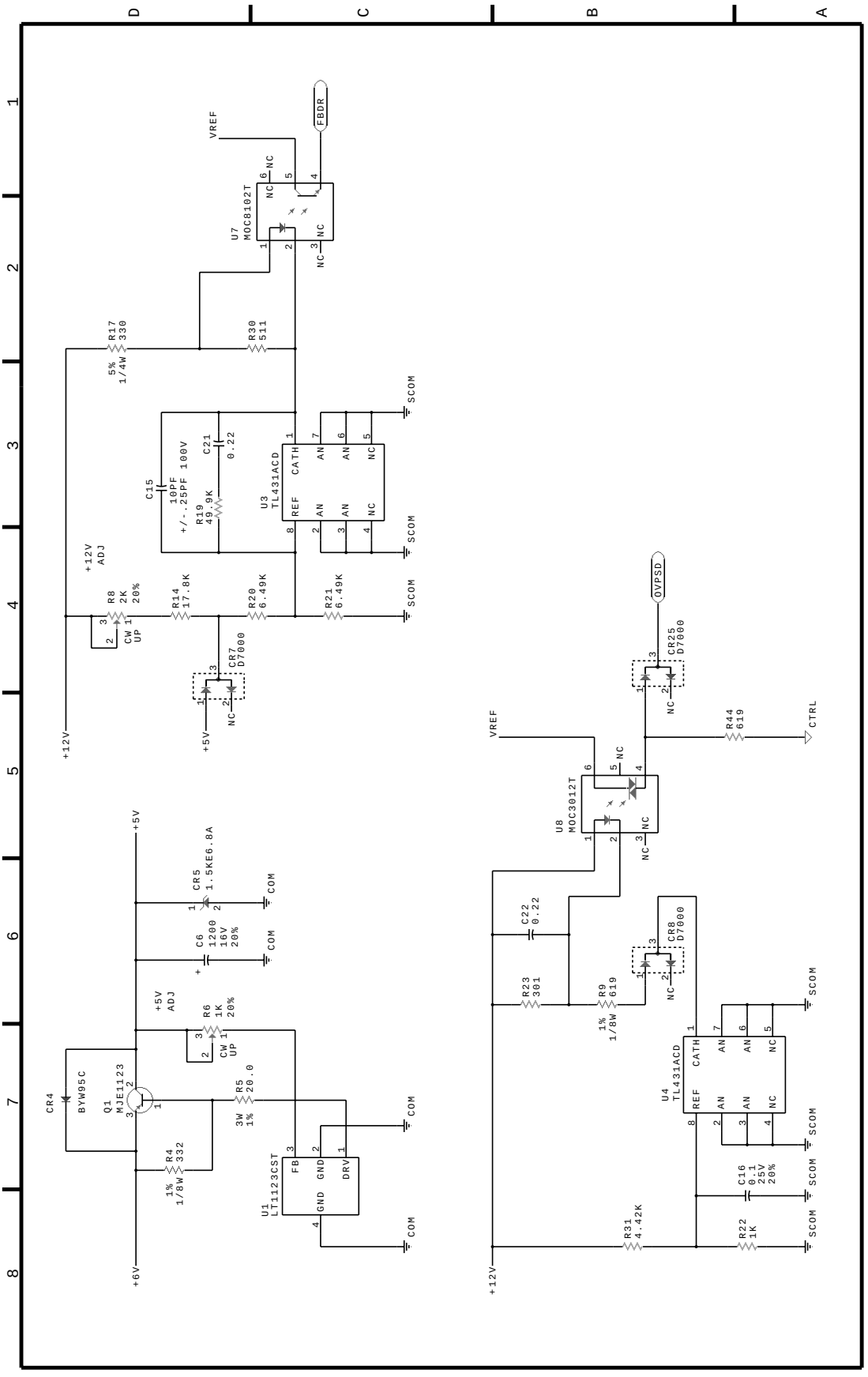

U10 LP2951
U11 UC3844AD
Q5 2N7002
Q6 T5087
Q7 BCX56-10
Q9 T3906
CR23 D7000
CR24 10MF2
CR26 D7000
CR27 BAT54
CR30 10MQ040
R37 10 1/8W 1%
R41 100K
R42 30.1
R43 3.01K
R45 1K
R47 23.7K
R48 1K
R49 20K
R50 100
R51 30.1K
R54 1K 1% 1/8W
R55 22.6K
R56 200K
R57 22.6K
R58 10K
R59 20K
R60 150K 3W 1%
R62 7.32K
R63 100
R64 2K
R66 2K 20% CW DN
R68 150K 3W 1%
C25 0.1 25V 20%
C26 0.1 50V 20%
C27 100 35V 20%
C28 0.027
C29 .001
C30 0.1 50V 20%
C31 4.7 16V 20%
C33 0.01
C34 0.1 50V 20%
C35 10PF +/-.25PF 100V
C38 0.022 16V 5%
C39 180PF
C41 820PF 1% 50V
C42 0.1 25V 20%
+VBIAS
+IBOOT
+V
VREF
PWR
CTRL
G_DRV
FBDR
FLTSD
OVPSD
IPSEN+
FREQ ADJ
SINGLE PT GND
SINGLE PT GND TO UC3844 GND PIN 9

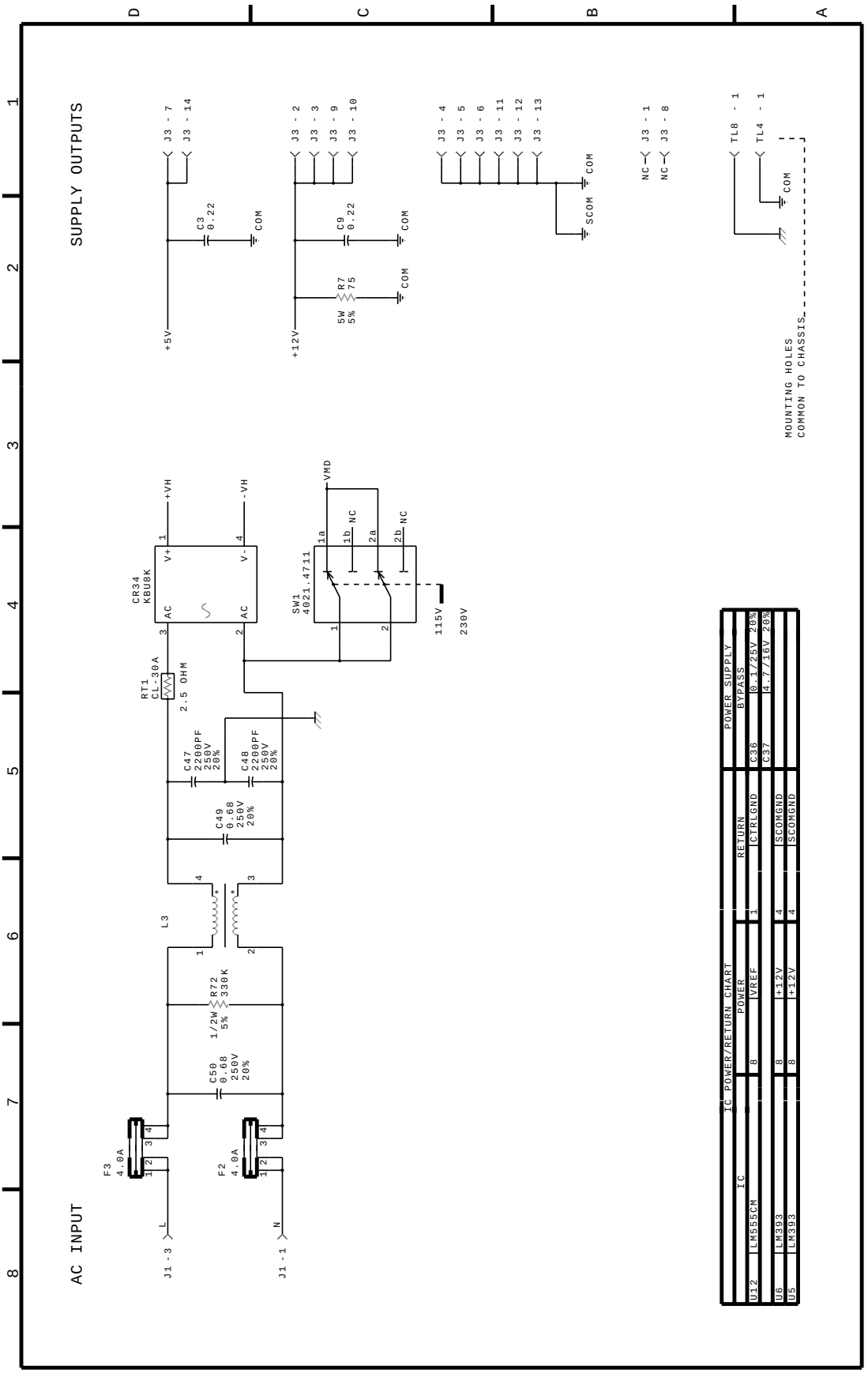
3 of 6


FLTSD
VREF
R67 21.5K
C44 4.7 16V 20%
CTRL
C43 0.01
CR31 D7000
U12 LM555CM
R DIS THR CV TR OUT
Q10 T3904
C32 0.1 16V 10%
R52 1.5K
R53 4.99K
U9 MOC8102T
NC
R33 619
R34 619
CR15 BZX84C6V8
Q2 T3904
SCOM
+12V
R16 10K
U6 LM393
U5 LM393
+2.5V
C14 0.1 25V 20%
C19 0.1 25V 20%
C12 0.1 25V 20%
C18 0.1 25V 20%
R12 10K
R35 10K
R11 10K
R26 100
R25 49.9K
R13 9.09K
R27 35.7K
R10 47.5K
+5V
C11 0.01 100V 10%
COM
CR14 BAT54
CR13 1SMB5918
CR10
10MF2
C10 470PF 100V 5%
C17 560PF
R3 249 1% 1/8W
R32 68.1 1/4W 1%
+6SWV
CR9
R24 10K 1% 1/8W
ISSEN+
R15 4.99K
U2 LM4040
C13 0.1 25V 20%

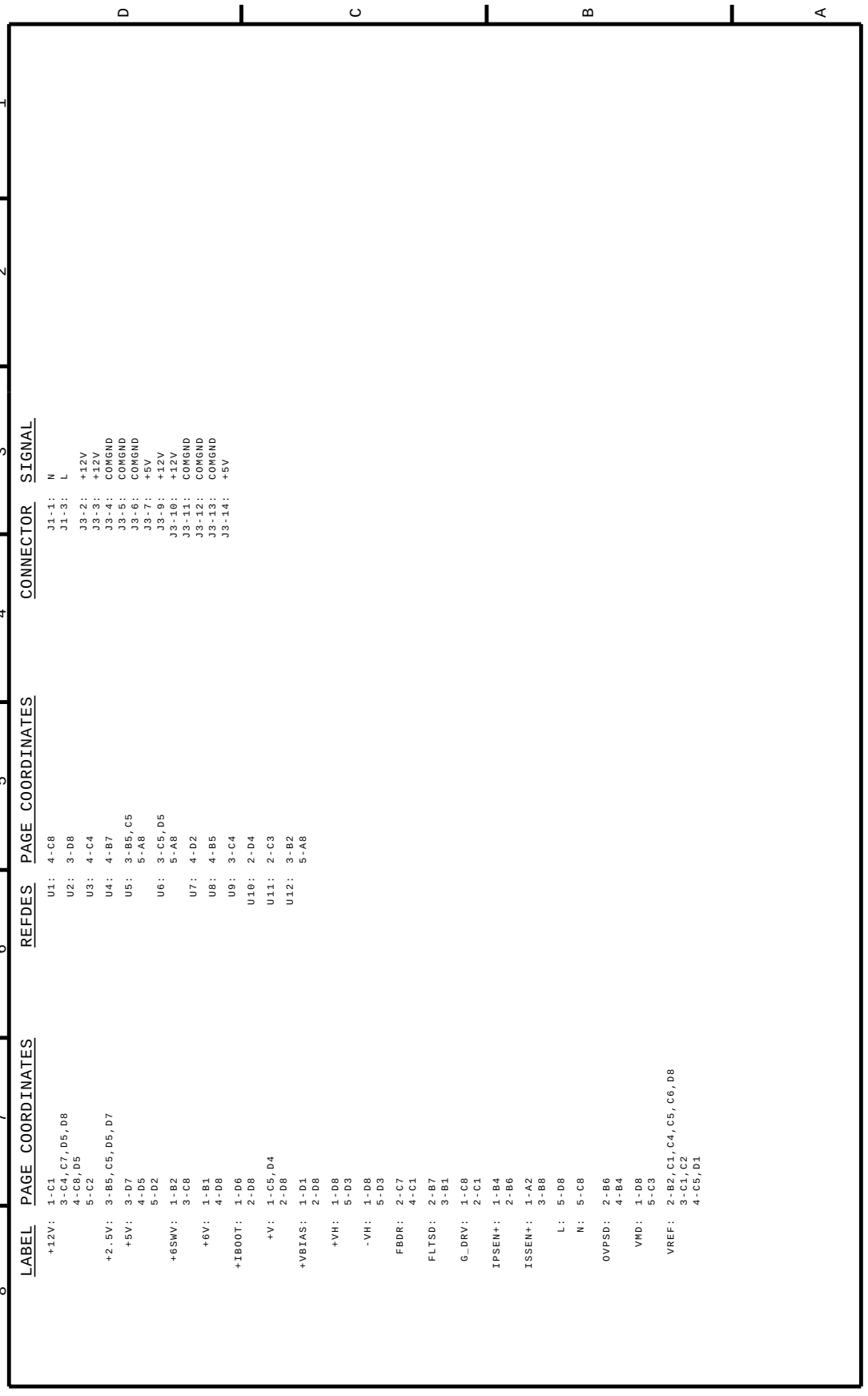
4 of 6


D
C
B
A
1
2
3
4
5
6
7
8
VREF
FBDR
U7
MOC8102T
NC
R17
330
5%
1/4W
R30
511
C15
10PF
+/-.25PF 100V
C21
0.22
R19
49.9K
U3
TL431ACD
CATH
REF
AN
NC
SCOM
+12V
ADJ
R8
2K
20%
CW 1
UP
R14
17.8K
R20
6.49K
R21
6.49K
CR7
D7000
+5V
NC
+12V
OVPSD
CR25
D7000
R44
619
CTRL
U8
MOC3012T
C22
0.22
CR8
D7000
R23
301
R9
619
1%
1/8W
U4
TL431ACD
C16
0.1
25V
20%
R31
4.42K
R22
1K
CR4
BYW95C
Q1
MJE1123
R6
1K
20%
R5
20.0
3W
1%
R4
332
1%
1/8W
U1
LT1123CST
FB
GND
DRV
COM
CR5
1.5KE6.8A
C6
1200
16V
20%
+6V

5 of 6


SUPPLY OUTPUTS
AC INPUT
J3 - 7
J3 - 14
J3 - 2
J3 - 3
J3 - 9
J3 - 10
J3 - 4
J3 - 5
J3 - 6
J3 - 11
J3 - 12
J3 - 13
J3 - 1
J3 - 8
TL8 - 1
TL4 - 1
COM
SCOM
NC
+5V
+12V
C3 0.22
C9 0.22
R7 75 5W 5%
MOUNTING HOLES
COMMON TO CHASSIS
CR34 KBU8K
RT1 CL-30A 2.5 OHM
SW1 4021.4711
VMD
115V
230V
C47 2200PF 250V 20%
C48 2200PF 250V 20%
C49 0.68 250V 20%
C50 0.68 250V 20%
L3
R72 330K 1/2W 5%
F3 4.0A
F2 4.0A
J1 - 3
J1 - 1
L
N
IC POWER/RETURN CHART
POWER SUPPLY BYPASS
C36 0.1/25V 20%
C37 4.7/16V 20%
U12 LM555CM 8 VREF 1 CTRLGND
U6 LM393 8 +12V 4 SCOMGND
U5 LM393 8 +12V 4 SCOMGND

6 of 6



LABEL	PAGE COORDINATES
+12V:	1-C1
	3-C4,C7,D5,D8
	4-C8,D5
	5-C2
+2.5V:	3-B5,C5,D5,D7
+5V:	3-D7
	4-D5
	5-D2
+6SWV:	1-B2
	3-C8
+6V:	1-B1
	4-D8
+IBOOT:	1-D6
	2-D8
+V:	1-C5,D4
	2-D8
+VBIAS:	1-D1
	2-D8
+VH:	1-D8
	5-D3
-VH:	1-D8
	5-D3
FBDR:	2-C7
	4-C1
FLTSD:	2-B7
	3-B1
G_DRV:	1-C8
	2-C1
IPSEN+:	1-B4
	2-B6
ISSEN+:	1-A2
	3-B8
L:	5-D8
N:	5-C8
OVPSD:	2-B6
	4-B4
VMD:	1-D8
	5-C3
VREF:	2-B2,C1,C4,C5,C6,D8
	3-C1,C2
	4-C5,D1

REFDES	PAGE COORDINATES
U1:	4-C8
U2:	3-D8
U3:	4-C4
U4:	4-B7
U5:	3-B5,C5
	5-A8
U6:	3-C5,D5
	5-A8
U7:	4-D2
U8:	4-B5
U9:	3-C4
U10:	2-D4
U11:	2-C3
U12:	3-B2
	5-A8

CONNECTOR	SIGNAL
J1-1:	N
J1-3:	L
J3-2:	+12V
J3-3:	+12V
J3-4:	COMGND
J3-5:	COMGND
J3-6:	COMGND
J3-7:	+5V
J3-9:	+12V
J3-10:	+12V
J3-11:	COMGND
J3-12:	COMGND
J3-13:	COMGND
J3-14:	+5V

For your notes

4 OPTION ASSEMBLIES AND PCBs

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Schematic Diagram SD800862-001E 4-56

Introduction

This chapter presents information about the option assemblies, pn 416021-001C, 416021-002C, 418394-001A, and 418394-002A, and the option PCBs, pn 800836-002A, 800862-001E, and 801318-001A. The table below gives additional information about these options.

Option	Assembly Part Number	PCB Part Number
ETCO2 w/Defib Sync & Remote Alarm[1]	416021-001C OR 418394-001A	800836-002A & 800862-001E OR 801318-001A & 800862-001E
Defib Sync & Remote Alarm[1]	416021-002C OR 418394-002A	800836-002A OR 801318-001A

[1]There are two assemblies for each option. Assembly pn 416021-001C and 416021-002C and their corresponding PCBs were used in older Eagle 3000 monitors that have the 1/4-inch phone jack type connector for remote alarm. Assembly pn 418394-001A and 418394-002A and their corresponding PCBs are used in new Eagle 3000 monitors, which have a 9-pin subminiature “D” connector for remote alarm.

Exploded View PN 416021-001C/002C

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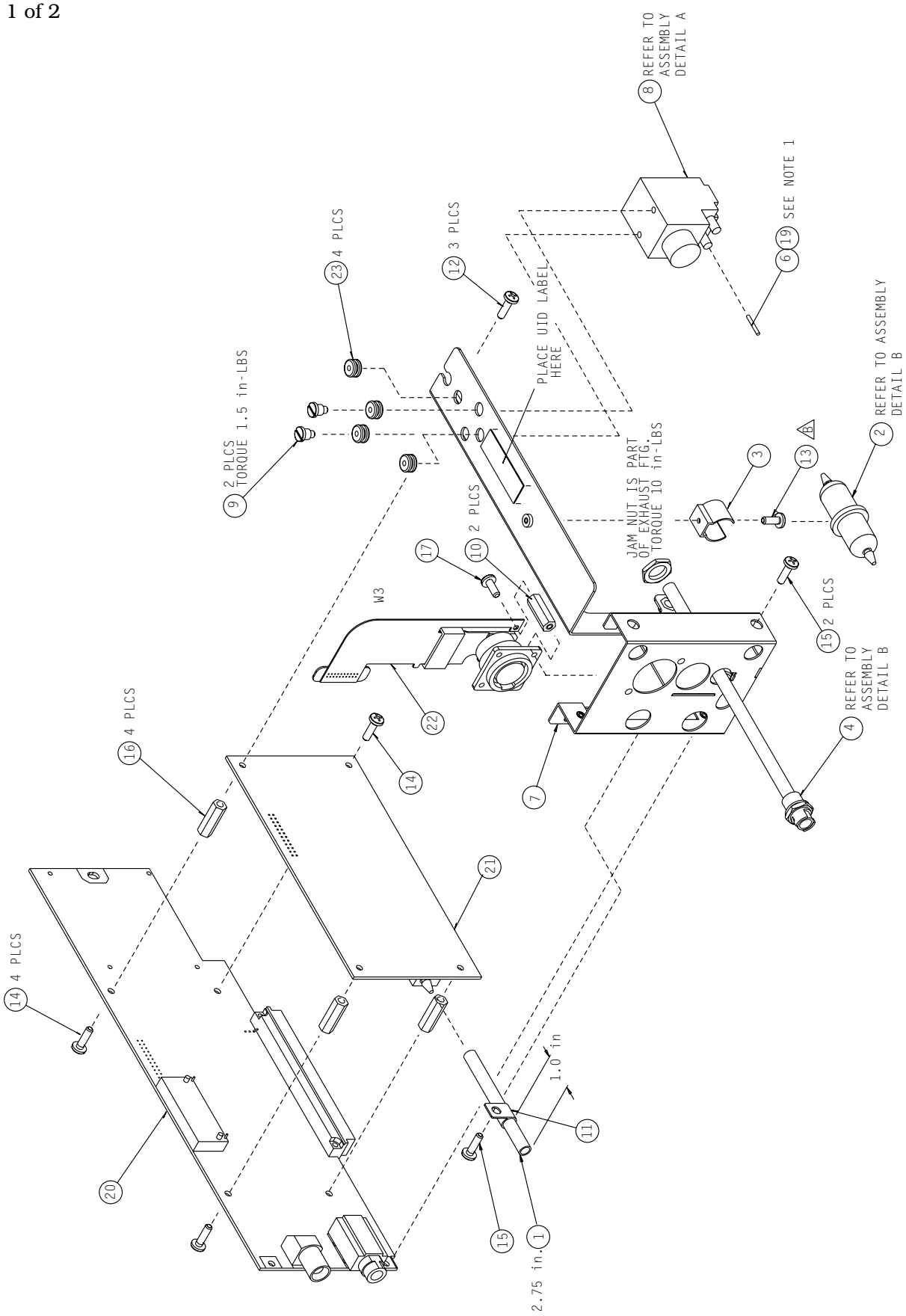
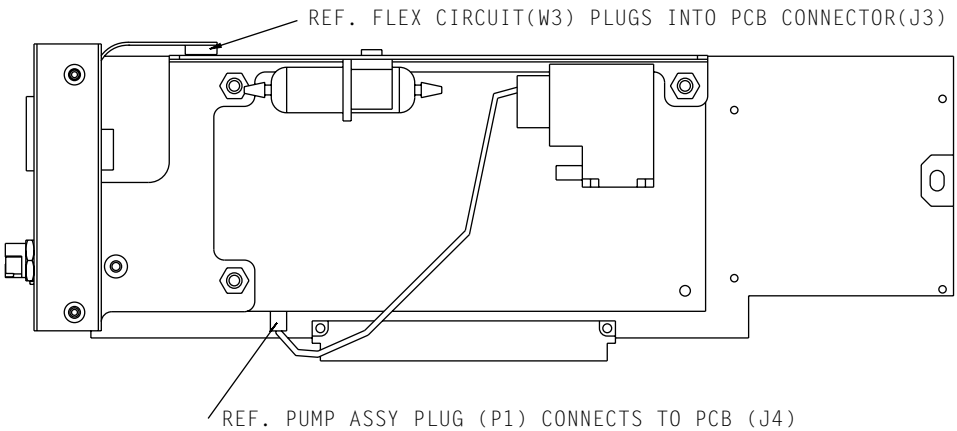
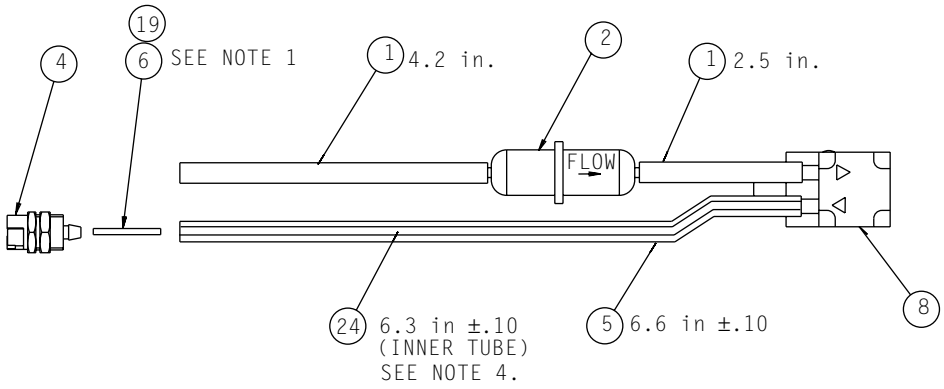




ASSEMBLY DETAIL A



ASSEMBLY DETAIL B

NOTES:

1. APPLY ADHESIVE 360 DEG. ON ITEM 6 FOR GAS SEAL.
2. ASSEMBLE FLEX ASSY ITEM 22 TO BRACKET ITEM 7 FIRST
3. ASSEMBLE TUBE CLAMP ITEM 11 WITH TUBE ITEM 1 TO BRACKET SECOND.
4. ALCOHOL MAY BE USED AS A LUBRICANT IN ASSEMBLING TUBING.

Parts List PN 416021-001C

Item	Reference Designation	Parts List	Part Number	Qty
1		Tubing, Silastic	401582-001	AR
2		Filter, 25 Micron, 1/8 Barbs	413049-001	1
3		Clip Component	413337-001	1
4		Coupling, Panel	413757-001	1
5		Tubing, Tygon, 5/32	413779-001	AR
6		Fitting, Barb, SAM Pump	415516-001	2
7		Bracket Assembly, ETCO2	415965-001	1
8		Pump Assembly, Micro-diaphragm, w/ Connector	416008-001	1
9		Screw, Shoulder	416069-001	2
10		Spacer, Hex, 2-56 x 1.00	416409-001	2
11		Tube Clamp, 0.25 diameter	416410-001	1
12		Screw, PNH, Phillips, 4-40 x 1/2	45000-408	3
13		Screw, BDGH, 4-40 x 0.188	406124-003	1
14		Screw, BDGH, Phillips, 4-40 x 1/4	45074-408	5
15		Screw, BDGH, Phillips, 6-32 x 1/4	45074-608	3
16		Spacer	4603-412	4
17		Screw, BDGH, SST, 2-56 x 3/16	4760-008	1
19		Adhesive, Loctite	4851-089	AR
20		Monitor Options PCB Assembly, 1/4-inch phone jack remote alarm connector	800836-002	1
21		Capnostat CO2 Subsystem PCB Assembly	800862-001	1
22		Flex Circuit, ETCO2 Connector	801014-001	1
23		Grommet Vibration Damper	S112-100-001	4
24		Tubing, Tygon, 1/16 ID x 1/8 OD	S509-104-002	AR

Parts List PN 416021-002C

Item	Reference Designation	Parts List	Part Number	Qty
1		Bracket, Connector Mounting	415887-002	1
2		Screw, BDGH, Phillips, 6-32 x 1/4	45074-608	2
3		Monitor Options PCB Assembly, 1/4-inch phone jack remote alarm connector	800836-002	1

Exploded View PN 418394-001A/002A

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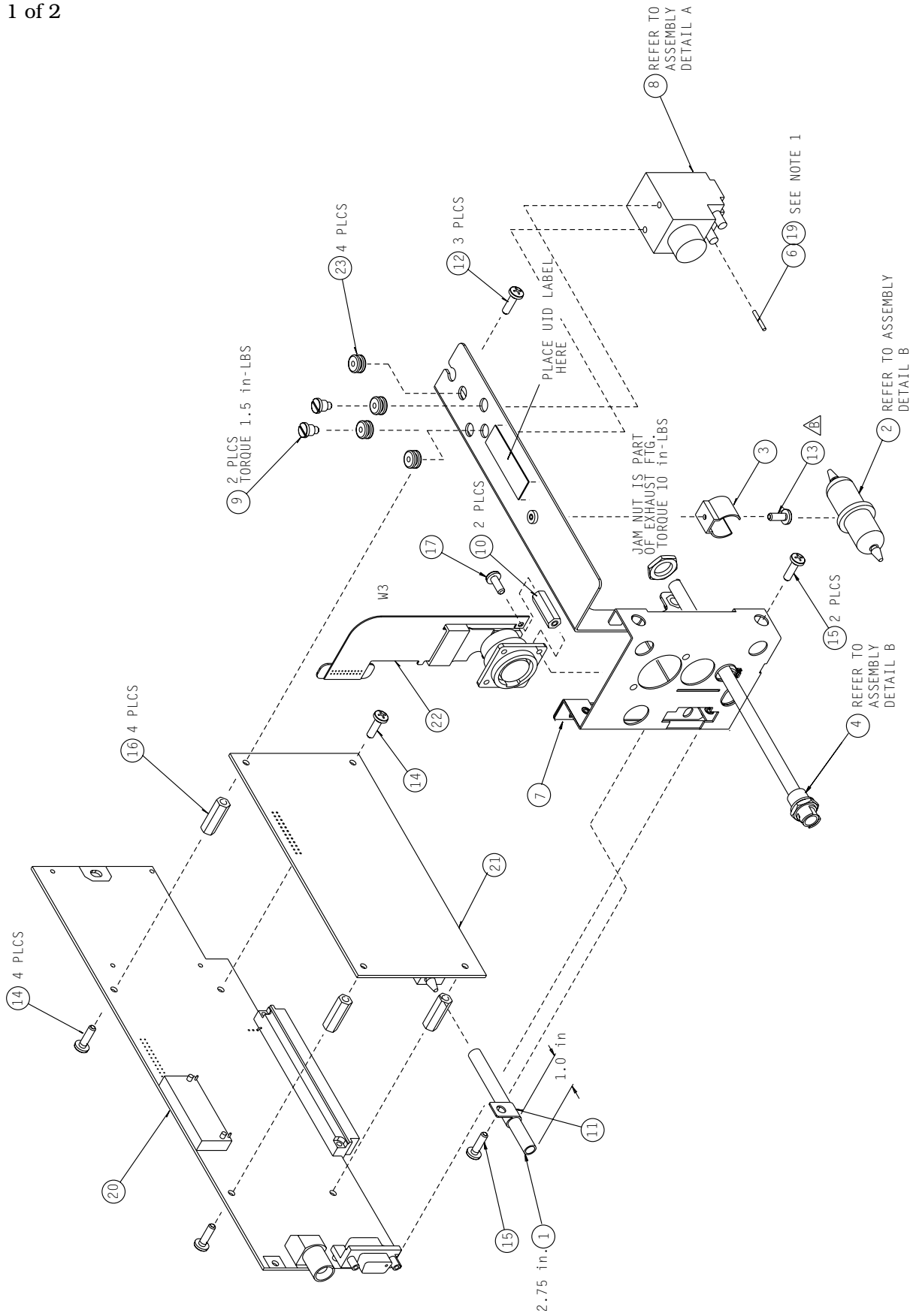
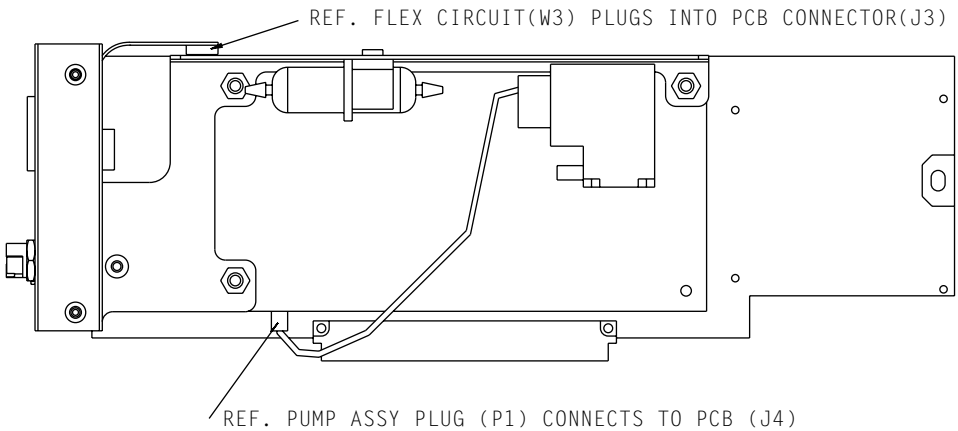
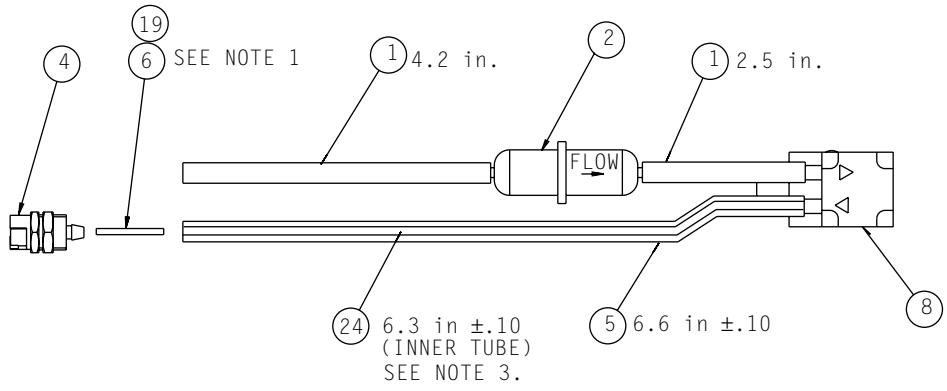




ASSEMBLY DETAIL A



ASSEMBLY DETAIL B

NOTES:

1. APPLY ADHESIVE 360 DEG. ON ITEM 6 FOR GAS SEAL.
2. ASSEMBLE FLEX ASSY, ITEM 22, TO BRACKET ITEM 7, THEN ASSEMBLE TUBE CLAMP, ITEM 11, WITH TUBE, ITEM 1, TO BRACKET.
4. ALCOHOL MAY BE USED AS A LUBRICANT WHEN INSERTING INNER TUBING.

Parts List PN 418394-001A

Item	Reference Designation	Parts List	Part Number	Qty
1		Tubing, Silastic	401582-001	AR
2		Filter, 25 Micron, 1/8 Barbs	413049-001	1
3		Clip Component	413337-001	1
4		Coupling, Panel	413757-001	1
5		Tubing, Tygon, 5/32	413779-001	AR
6		Fitting, Barb, SAM Pump	415516-001	2
7		Bracket Assembly, ETCO2	415965-002	1
8		Pump Assembly, Micro-diaphragm, w/ Connector	416008-001	1
9		Screw, Shoulder	416069-001	2
10		Spacer, Hex, 2-56 x 1.00	416409-001	2
11		Tube Clamp, 0.25 diameter	416410-001	1
12		Screw, PNH, Phillips, 4-40 x 1/2	45000-408	3
13		Screw, BDGH, 4-40 x 0.188	406124-003	1
14		Screw, BDGH, Phillips, 4-40 x 1/4	45074-408	5
15		Screw, BDGH, Phillips, 6-32 x 1/4	45074-608	3
16		Spacer	4603-412	4
17		Screw, BDGH, SST, 2-56 x 3/16	4760-008	1
19		Adhesive, Loctite	4851-089	AR
20		Circuit Board	801318-001	1
21		Capnostat CO2 Subsystem PCB Assembly	800862-001	1
22		Flex Circuit, ETCO2 Connector	801014-001	1
23		Grommet Vibration Damper	S112-100-001	4
24		Tubing, Tygon, 1/16 ID x 1/8 OD	S509-104-002	AR

Parts List PN 418394-002A

Item	Reference Designation	Parts List	Part Number	Qty
7		Bracket, Connector Mounting	415887-004	1
15		Screw, BDGH, Phillips, 6-32 x 1/4	45074-608	3
20		Circuit Board	801318-001	1

Switches and Controls PN 800836-002A

Listed below are all switches, controls, and LEDs found on the circuit board, pn 800836-002A.

Table 4-1. Switches and Controls

Designator	Name	Function
DS1	Green light-emiting diode	STARS status LED
R30	Res, Var, 10K	Gain adjust
R31	Res, Var, 100Ω	Offset adjust

PCB Connectors PN 800836-002A

Pin-by-pin descriptions and the signal names for each internal PCB connector are described below.

Table 4-2. Connector J6 (96-Pin Option Board Interface Connector)

Pin	Name	Input/ Output	Description
A1	+5	I	+5 V power
A2	SPARE1_I/O	I/O	Processor spare
A3	SPARE2_I/O	I/O	Processor spare
A4	OPT_BRD_IRQ5*	O	Interrupt
A5	OPT_BRD_AVAIL*	O	Option board available
A6	AVEC*/IACK5*	I/O	Acknowledge
A7	ETCO2_TXD	O	ETCO2 transmit
A8	STARS_TXD	O	STARS transmit
A9	DSACK1*	O	Data strobe acknowledge
A10	DSACK0*	O	Data strobe acknowledge
A11	GND	O	+5 V power return
A12	SIZE1	I	Processor bus site to transfer
A13	GND	O	+5 V power return
A14	SIZE0	I	Processor bus site to transfer
A15	GND	O	+5 V power return
A16	AS*	I	Processor address strobe
A17	GND	O	+5 V power return
A18	DS*	I	Processor data strobe
A19	GND	O	+5 V power return
A20	OE*	I	Processor read strobe
A21	GND	O	+5 V power return
A22	R/W*	I	Processor read/write strobe
A23	GND	O	+5 V power return
A24	WE1*	I	Processor word write strobe
A25	GND	O	+5 V power return
A26	WE0*	I	Processor byte write strobe
A27	GND	O	+5 V power return
A28	NC		
A29	+12_RTN	O	+12 V power return
A30	+12_RTN	O	+12 V power return
A31	+12	I	+12 V power to option board
A32	+12	I	+12 V power to option board
B1	+5	I	+5 V POWER
B2	TP_RX-	O	Ethernet twisted pair RX-
B3	TP_RX+	O	Ethernet twisted pair RX+
B4	MARKER_IN_IRQ4*	O	Processor interrupt from Marker_In
B5	BOOT_SELECT*	O	Boot source

Table 4-2. Connector J6 (96-Pin Option Board Interface Connector)			
B6	RESETH*	I	Processor hard reset
B7	ETCO2_RXD	O	ETCO2 receive
B8	STARTS_RXD	O	STARS receive
B9	A1	I	Processor address signal
B10	A3	I	Processor address signal
B11	A5	I	Processor address signal
B12	A7	I	Processor address signal
B13	A9	I	Processor address signal
B14	A11	I	Processor address signal
B15	A13	I	Processor address signal
B16	A15	I	Processor address signal
B17	A17	I	Processor address signal
B18	A19	I	Processor address signal
B19	A21	I	Processor address signal
B20	A23	I	Processor address signal
B21	D17	I/O	Processor data signal
B22	D19	I/O	Processor data signal
B23	D21	I/O	Processor data signal
B24	D24	I/O	Processor data signal
B25	D25	I/O	Processor data signal
B26	D27	I/O	Processor data signal
B27	D29	I/O	Processor data signal
B28	D31	I/O	Processor data signal
B29	+12_RTN	O	+12 V power return
B30	+12_RTN	O	+12 V power return
B31	+12	I	+12 V power to option board
B32	+12	I	+12 V power to option board
C1	+5	I	+5 V power
C2	TP_TX-	I	Ethernet twisted pair TX-
C3	TP_TX+	I	Ethernet twisted pair TX+
C4	OPT_BRD_IRQ2*	O	Option board interrupt to processor
C5	OPT_BRD CS*	I	Option board chip select
C6	FLASH_WE1*	I	Flash write strobe
C7	ETCO2_IRQ3*	O	ETCO2 interrupt
C8	STARS_SERVICE*	I	STARS service mode
C9	A0	I	Processor address signal
C10	A2	I	Processor address signal
C11	A4	I	Processor address signal
C12	A6	I	Processor address signal
C13	A8	I	Processor address signal
C14	A10	I	Processor address signal
C15	A12	I	Processor address signal
C16	A14	I	Processor address signal
C17	A16	I	Processor address signal
C18	A18	I	Processor address signal

Table 4-2. Connector J6 (96-Pin Option Board Interface Connector)			
C19	A20	I	Processor address signal
C20	A22	I	Processor address signal
C21	D16	I/O	Processor data signal
C22	D18	I/O	Processor data signal
C23	D20	I/O	Processor data signal
C24	S22	I/O	Processor data signal
C25	D24	I/O	Processor data signal
C26	D26	I/O	Processor data signal
C27	D28	I/O	Processor data signal
C28	D30	I/O	Processor data signal
C29	+12_RTN	O	+12 V power return
C30	+12_RTN	O	+12 V power return
C31	+12	I	+12 V power to option board
C32	+12	I	+12V power to option board

Table 4-3. Connector J14 (24-Pin EtCO2 Connector)			
Pin	**Name**	**Input/ Output**	**Description**
1	EXP_IDØ	I	Board ID0 from EtCO2
2	NC		
3	EXP_ID1	I	Board ID1 from EtCO2
4	NC		
5	EXP_ID2	I	Board ID2 from EtCO2
6	NC		
7	EXP_ID3	I	Board ID3 from EtCO2
8	NC		
9	GND	I	+5 V power return
10	+12_RTN	I	+12 V power return
11	+5	O	+5 V power to EtCO2
12	+12	O	+12 V power to EtCO2
13	+5	O	+5 V power to EtCO2
14	+12	O	+12 V power to EtCO2
15	GND	I	+5 V power return
16	+12_RTN	I	+12 V power return
17	ETCO2_TXD	O	Transmit data to EtCO2
18	EXP_CONFIGØ	O	Boot strap 0 to EtCO2
19	ETCO2_RXD	I	Receive data from EtCO2
20	EXP_CONFIG1	O	Boot strap 1 to EtCO2
21	ETCO2_IRQ3*	I	IRQ from EtCO2
22	EXP_CONFIG2	O	Boot strap 2 to EtCO2
23	ETCO2_RESET*	O	Reset to EtCO2
24	EXP_CONFIG3	O	Boot strap 3 to EtCO2

Table 4-4. Connector J21 (6-Pin Analog Outputs/Defib Sync Connector)

Pin	Name	Input/ Output	Description
1	ANALOG ECG OUT	O	Analog ECG output signal
2	GND	I	Digital return
3	DEFIB_MARKER_OUT	O	Digital defib output synchronization signal
4	DEFIB_MARKER_IN	I	Digital defib input signal
5	ANLG_RTN	I	Analog return
6	ANALOG BP OUT	O	Analog BP output signal

Table 4-5. Connector J22 (3-Pin Remote Alarm Connector)

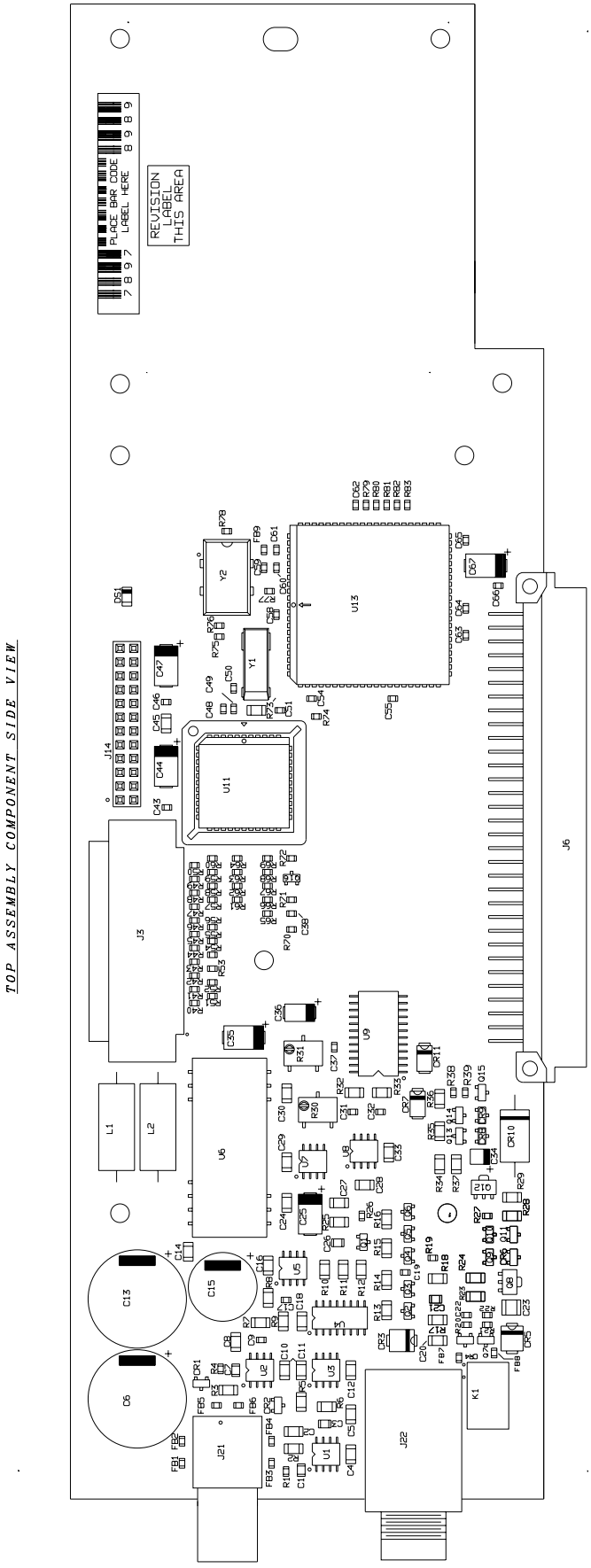
Pin	Name	Input/ Output	Description
1	GND	I	Sleeve
2	TIP	–	Tip
3	RNG	–	Ring

Table 4-6. Connector J23 (50-Pin Special Thermal Array Recorder Connector)

Pin	Name	Input/ Output	Description
1A	NC		
2A	NC		
3A	NC		
4A	A4	O	Address signal
5A	A3	O	Address signal
6A	A2	O	Address signal
7A	A1	O	Address signal
8A	A0	O	Address signal
9A	NC		
10A	STAR_SYNC	I	Input from STAR writer
11A	STAR_RDRDY*	I	Input from STAR writer
12A	STAR_READ*	O	Output to STAR writer
13A	STAR_RESET*	O	Output to STAR writer
14A	STAR_ERROR	I	Input from STAR writer
15A	STAR_WRRDY*	I	Input from STAR writer
16A	STAR_WRITE*	O	Output to STAR writer
17A	NC		
18A	D7	I/O	Data signal
19A	D6	I/O	Data signal
20A	D5	I/O	Data signal
21A	D4	I/O	Data signal
22A	D3	I/O	Data signal
23A	D2	I/O	Data signal
24A	D1	I/O	Data signal
25A	D0	I/O	Data signal

Table 4-6. Connector J23 (50-Pin Special Thermal Array Recorder Connector)			
1B	+12	O	+12 V power to STAR writer
2B	+12	O	+12 V power to STAR writer
3B	+12	O	+12 V power to STAR writer
4B	+12	O	+12 V power to STAR writer
5B	+12	O	+12 V power to STAR writer
6B	+12	O	+12 V power to STAR writer
7B	+12	O	+12 V power to STAR writer
8B	+12	O	+12 V power to STAR writer
9B	STAR_AVAIL	I	STAR available
10B	+12_RTN	I	+12 V power return
11B	+12_RTN	I	+12 V power return
12B	+12_RTN	I	+12 V power return
13B	+12_RTN	I	+12 V power return
14B	+12_RTN	I	+12 V power return
15B	+12_RTN	I	+12 V power return
16B	+12_RTN	I	+12 V power return
17B	+12_RTN	I	+12 V power return
18B	+12_RTN	I	+12 V power return
19B	GND	I	+5 V return
20B	GND	I	+5 V return
21B	+5		+5 V power to STAR writer
22B	+5		+5 V power to STAR writer
23B	NC		
24B	NC		
25B	NC		

Parts Location Diagram PN 800836-002A



Parts List PN 800836-002A

Reference Designation	Description	Part Number	Qty
C1, 7	Cap, Cer, 2200pF, 5%, 50V, SM	1182-222	2
C2, 4, 8, 10, 11, 12, 14, 16, 18, 20, 24, 28, 29, 30, 33, 45	Cap, Cer, 0.1µF, 20%, 50V	404370-001	16
C3, 26	Cap, Cer, 0.0056uF, 5%	1182-562	2
C5, 27	Cap, Cer, 0.0027µF, 5%, 50V, SM	1181-272	2
C6, 13	Cap, Al, 1500µF, 20%, 25V	414853-001	1
C9, 17, 31, 32, 50, 51	Cap, NPO, 33pF, 5%, 50V, SM	411576-004	1
C15	Cap, Al, 820µF, 20%, 25V, Radial	408957-001	1
C19, 49, 59	Cap, Cer, 0.1µF, 5%, 50V, SM	411575-012	3
C21	Cap, Cer, 0.047µF, 5%, 50V, SM	1182-824	1
C22, 37, 38, 43, 46, 48, 54, 55, 58, 60-66	Cap, Cer, 0.1µF, 5%, 16V	411575-002	16
C23	Cap, Cer, 0.22µF, 5%, 50V, SM	1182-224	1
C25, 35, 44, 47, 67	Cap, Tant, 10µF, 20%, 25V, SM	1152-106	5
C34	Cap, Tant, 1.0µF, 10%, 35V, SM	403907-001	1
C36	Serial Communication Controller, CMOS 85C30	401004-001	1
CR1, 2, 4	Diode Pair, Series, SM D7000	2013-201	3
CR3	Transorb, Bidirectional, 30V, 600W, SM SMBJ30	409052-001	1
CR5	Diode, Transient Voltage Suppression, SM P6SMB20AT1	403939-001	1
CR6, 8, 9	Diode, Schottky, SM BAT54	401985-001	3
CR7, 11	Diode, Schottky, Barrier, 1A, 40V, SM MBRS140T3	403187-001	2
CR10	Transient Voltage Suppressor, 16V, 10% 1N6276	410936-001	1
DS1	Light-Emitting Diode, Green, SM 1206	414417-004	1
FB1-9	Ferrite Bead BLM11A20	414061-001	9
J6	Connector, Dual In-Line, 96-Pin	410538-001	1
J14	Connector, Vertical, 12-Pin	1847-024	1
J21	Connector, Receptacle, PC Edge, 6-Pin	403933-001	1
J22	Jack, Phone, 1/4-inch, Right Angle, PCB	415158-001	1
J23	Connector, 50-Pin	404289-001	1
K1	Relay, SPDT, 5V, 280mW	409019-001	1
L1, 2	Inductor, Power, 33µH, 1.81A, 10%	414943-001	1
Q1	Transistor, MOS-FET, N-Channel, SM 2N7002	401414-001	1
Q2, 3, 4, 5, 6, 9, 10, 11, 13, 14	Transistor, NPN, SM T3904	2511-001	10
Q7	Transistor, NPN, SM MMBT4401	405692-001	1
Q8, 12	Transistor, NPN, SM BCX56-1	2712-056	2
Q15, 16	Transistor, PNP, SM T3906	2511-101	2
R1, 4, 26, 27, 38, 39, 53, 61-72, 74, 75, 78-83	Res, Cer, 10K, 1%, 1/16W, SM	410334-013	27

Reference Designation	Description	Part Number	Qty
R2, 3	Res, Cer, 100Ω, 1%, 1/8W, SM	1082-755	2
R5, 6, 11, 25	Res, Cer, 340K, 1%, 1/8W, SM	1082-782	4
R7, 8, 9, 10, 14	Res, Cer, 20K, 1%, 1/8W, SM	1082-202	5
R12, 34, 35, 36, 37	Res, Cer, 47.5K, 1%, 1/8W, SM	1082-757	5
R13	Res, Cer, 51.1K, 10%, 1/4W, SM	1082-772	1
R15	Res, Cer, 34.8K, 10%, 1/4W, SM	1082-791	1
R16, 28	Res, Cer, 3.4K, 1%, 1/8W, SM	1082-759	2
R17, 18	Res, Cer, 10K, 1%, 1/8W, SM	1082-104	2
R19	Res, Cer, 249Ω, 1%, 1/16W	410334-084	1
R20, 40-52, 54-60, 77	Res, Cer, 49.9Ω, 1%, 1/16W, SM	410334-040	22
R21, 22, 76	Res, Cer, 1K, 1%, 1/16W, SM	410334-008	3
R23, 29, 32, 33	Res, Cer, 49.9 Ω, 1%, 1/8W, SM	1082-799	4
R24	Res, Cer, 1.5K, 1%, 1/8W, SM	1082-768	1
R30	Res, Var, 10K, SM	407457-004	1
R31	Res, Var, 100Ω, SM	407457-003	1
R73	Res, Chip, 4.7M, 1%, 1/8W, SM	1082-964	1
U1, 2, 3, 5, 8	Operational Ampl, JFET, Dual, SM MC34182D	401292-001	5
U4	Res, Ntwk, 20K, 0.1%	414854-001	1
U6	Converter, DC-DC, Isolated, 12V	414845-001	1
U7	Voltage Reference, SM LT1021DCS8-10	401294-001	1
U9	DAC, 12-Bit, Quad, PLCC DAC8221FS	406512-001	1
U11	Microprocessor, Writer	415259-002	1
U13	EPLD, Programmed, Eagle 3000 Option PCB	415295-003	1
Y1	Crystal, 3.6864MHz	408828-001	1
Y2	Crystal Oscillator, 25.000mHz, SM	405676-001	1
	Socket, PLCC, 44-Pin, SM (for U11)	402412-001	1
	Circuit Board	800837-002	1
	Schematic Diagram	SD800836-002	1

Schematic Diagram PN SD800836-002A

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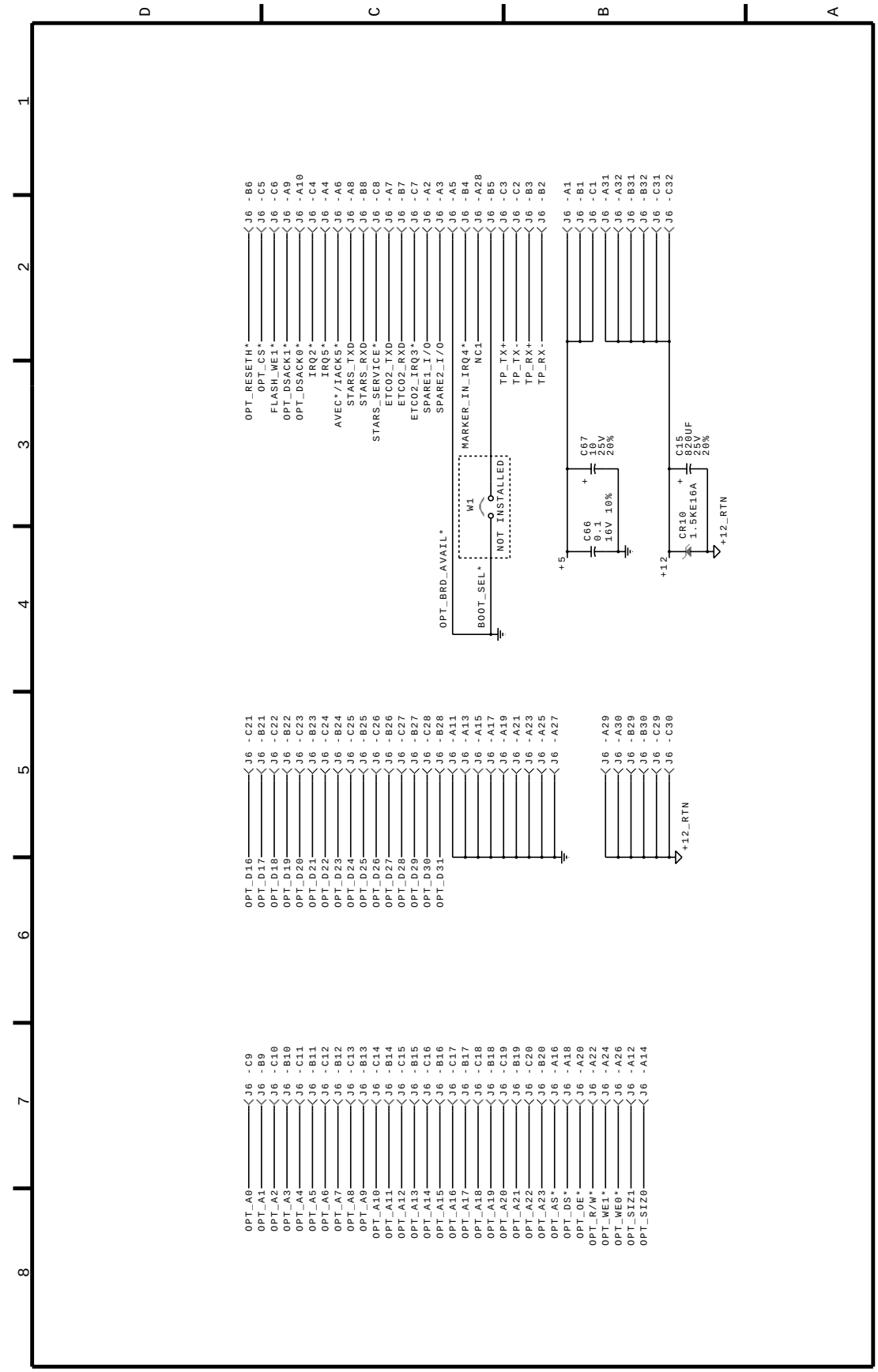

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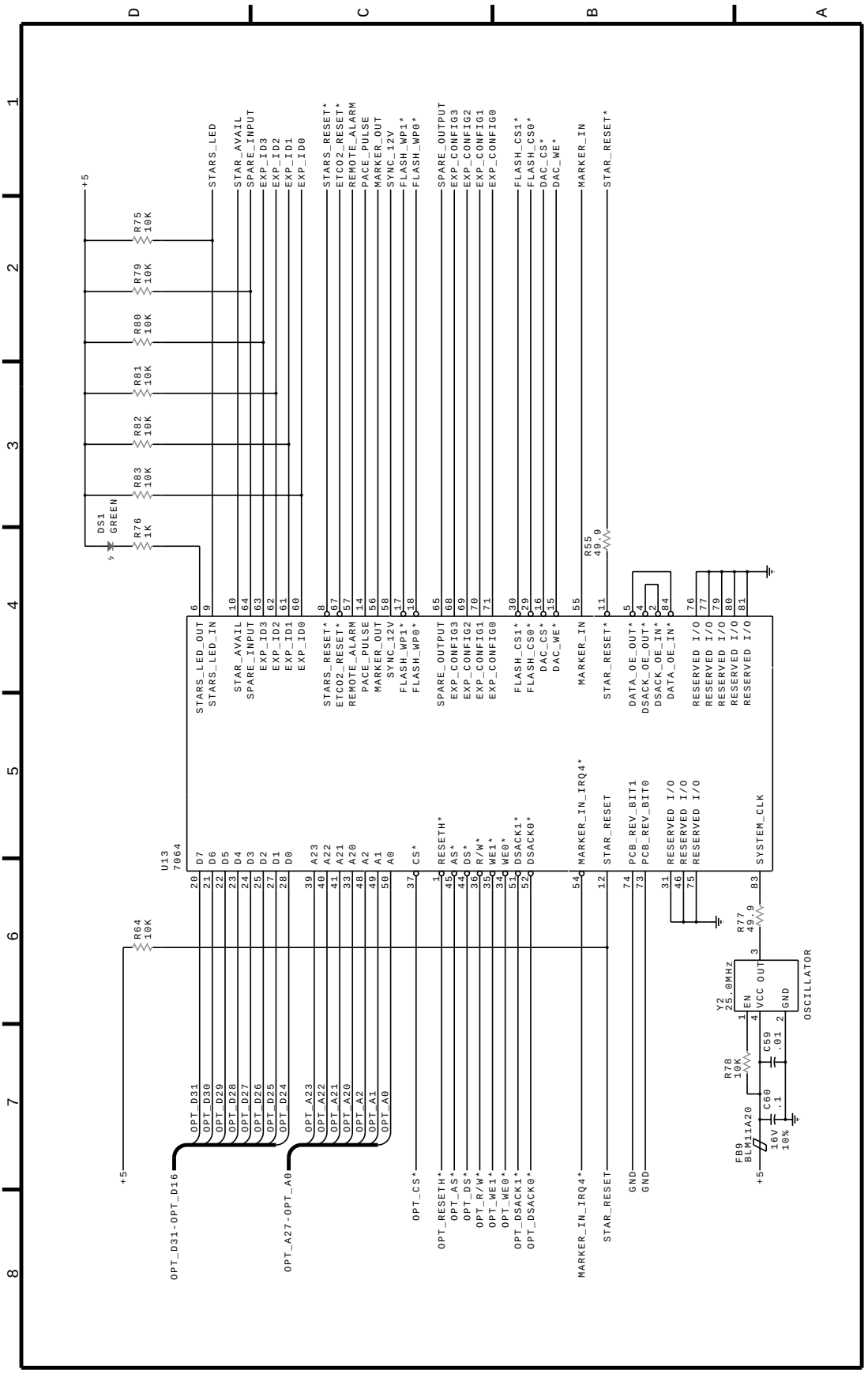
U13
7064
STARS_LED_OUT
STARS_LED_IN
STAR_AVAIL
SPARE_INPUT
EXP_ID3
EXP_ID2
EXP_ID1
EXP_ID0
STARS_RESET*
ETCO2_RESET*
REMOTE_ALARM
PACE_PULSE
MARKER_OUT
SYNC_12V
FLASH_WP1*
FLASH_WP0*
SPARE_OUTPUT
EXP_CONFIG3
EXP_CONFIG2
EXP_CONFIG1
EXP_CONFIG0
FLASH_CS1*
FLASH_CS0*
DAC_CS*
DAC_WE*
MARKER_IN
STAR_RESET*
DATA_OE_OUT*
DSACK_OE_OUT*
DSACK_OE_IN*
DATA_OE_IN*
RESERVED I/O
RESERVED I/O
RESERVED I/O
RESERVED I/O
D7
D6
D5
D4
D3
D2
D1
D0
A23
A22
A21
A20
A2
A1
A0
CS*
RESETH*
AS*
DS*
R/W*
WE1*
WE0*
DSACK1*
DSACK0*
MARKER_IN_IRQ4*
STAR_RESET
PCB_REV_BIT1
PCB_REV_BIT0
RESERVED I/O
RESERVED I/O
SYSTEM_CLK
OPT_D31-OPT_D16
OPT_A27-OPT_A0
OPT_D31
OPT_D30
OPT_D29
OPT_D28
OPT_D27
OPT_D26
OPT_D25
OPT_D24
OPT_A23
OPT_A22
OPT_A21
OPT_A20
OPT_A2
OPT_A1
OPT_A0
OPT_CS*
OPT_RESETH*
OPT_AS*
OPT_DS*
OPT_R/W*
OPT_WE1*
OPT_WE0*
OPT_DSACK1*
OPT_DSACK0*
MARKER_IN_IRQ4*
STAR_RESET
GND
GND
+5
DS1
GREEN
R76
1K
R83
10K
R82
10K
R81
10K
R80
10K
R79
10K
R75
10K
R64
10K
R55
49.9
R77
49.9
R78
10K
C59
.01
C60
.1
16V
10%
FB9
BLM11A20
Y2
25.0MHz
EN
VCC
OUT
GND
OSCILLATOR
A
B
C
D
1
2
3
4
5
6
7
8

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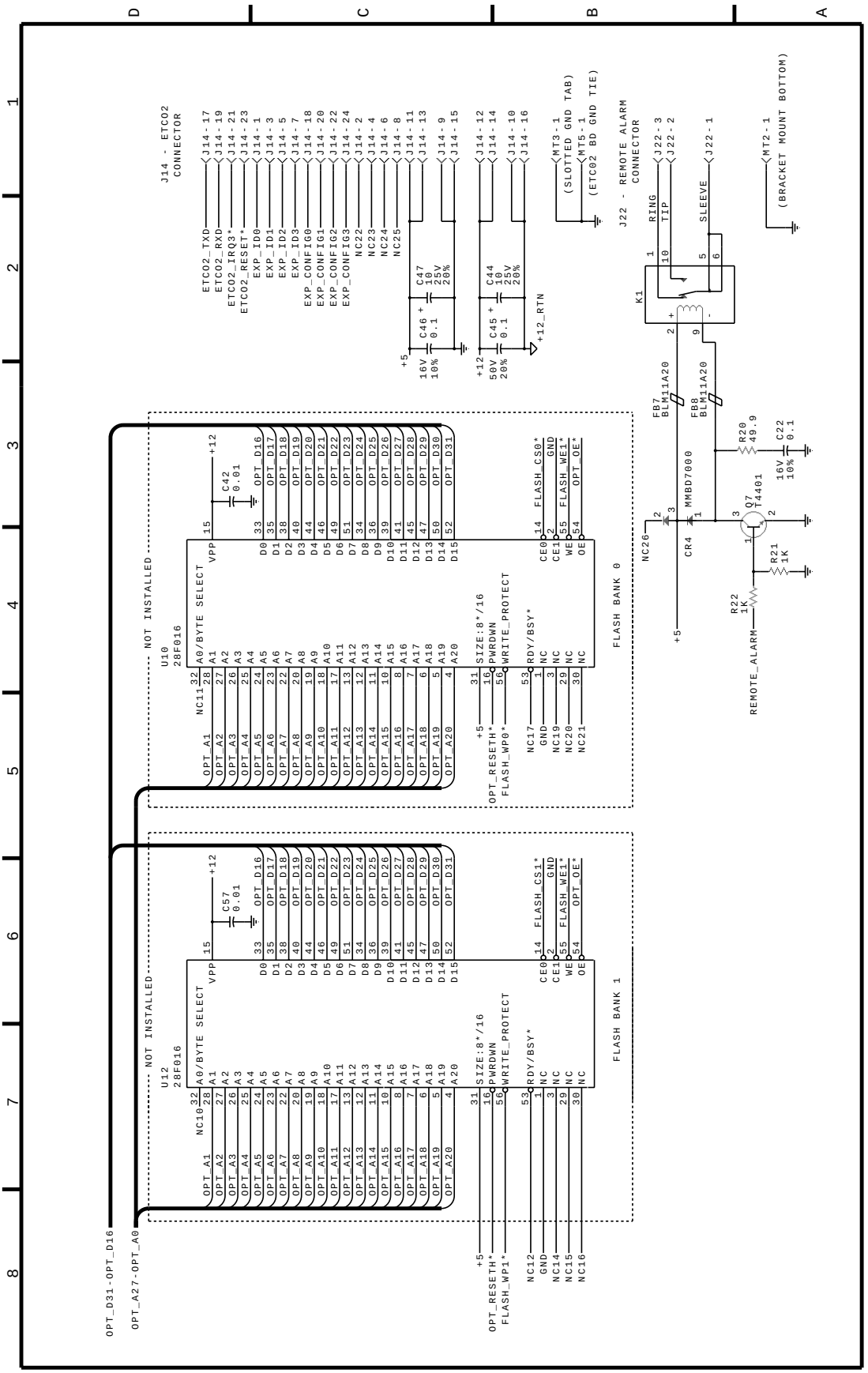
J14 - ETCO2 CONNECTOR
ETCO2_TXD
ETCO2_RXD
ETCO2_IRQ3*
ETCO2_RESET*
EXP_ID0
EXP_ID1
EXP_ID2
EXP_ID3
EXP_CONFIG0
EXP_CONFIG1
EXP_CONFIG2
EXP_CONFIG3
NC22
NC23
NC24
NC25
C47
C46
C44
C45
+12_RTN
(SLOTTED GND TAB)
(ETC02 BD GND TIE)
J22 - REMOTE ALARM CONNECTOR
RING
TIP
SLEEVE
K1
FB7 BLM11A20
FB8 BLM11A20
R20 49.9
C22 0.1
MMBD7000
CR4
Q7 T4401
R21 1K
R22 1K
REMOTE_ALARM
(BRACKET MOUNT BOTTOM)
NOT INSTALLED
U10 28F016
U12 28F016
A0/BYTE SELECT
SIZE:8*/16
PWRDWN
WRITE_PROTECT
RDY/BSY*
FLASH_CS0*
FLASH_CS1*
FLASH_WE1*
OPT_RESETH*
FLASH_WP0*
FLASH_WP1*
FLASH BANK 0
FLASH BANK 1
OPT_D31-OPT_D16
OPT_A27-OPT_A0

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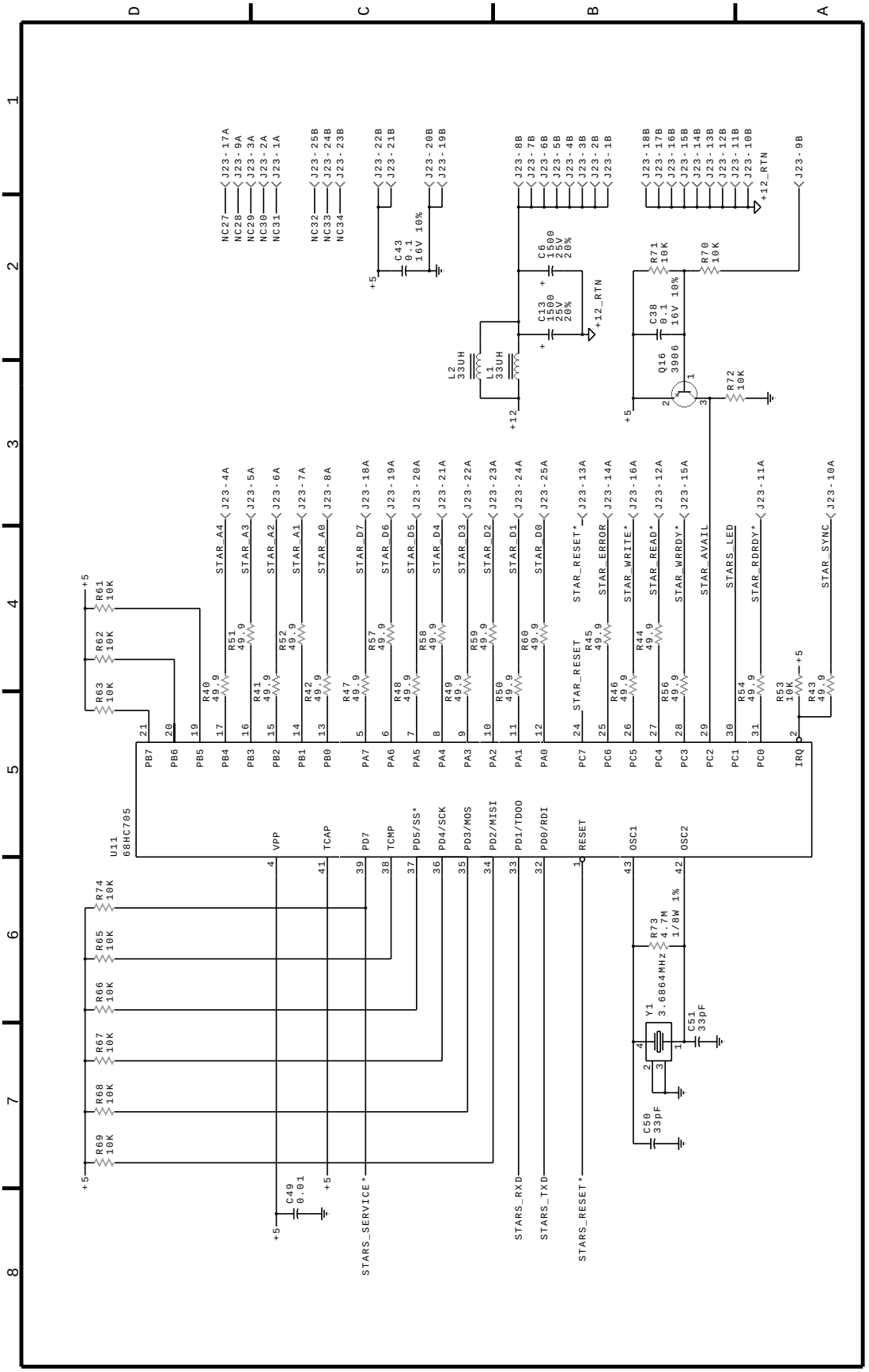
U11
68HC705
R40 49.9
R41 49.9
R52 49.9
R42 49.9
R47 49.9
R57 49.9
R48 49.9
R58 49.9
R49 49.9
R59 49.9
R50 49.9
R60 49.9
R45 49.9
R46 49.9
R44 49.9
R56 49.9
R54 49.9
R53 10K
R43 49.9
R61 10K
R62 10K
R63 10K
R74 10K
R65 10K
R66 10K
R67 10K
R68 10K
R69 10K
R73 4.7M 1/8W 1%
Y1 3.6864MHz
C51 33pF
C50 33pF
C49 0.01
C43 0.1 16V 10%
C6 1500 25V 20%
C13 150 25V 20%
L2 33UH
L1 33UH
C38 0.1 16V 10%
Q16 3906
R71 10K
R70 10K
R72 10K
STAR_A4
STAR_A3
STAR_A2
STAR_A1
STAR_A0
STAR_D7
STAR_D6
STAR_D5
STAR_D4
STAR_D3
STAR_D2
STAR_D1
STAR_D0
STAR_RESET*
STAR_ERROR
STAR_WRITE*
STAR_READ*
STAR_WRRDY*
STAR_AVAIL
STARS_LED
STAR_RDRDY*
STAR_SYNC
STARS_SERVICE*
STARS_RXD
STARS_TXD
STARS_RESET*
+5
+12
+12_RTN

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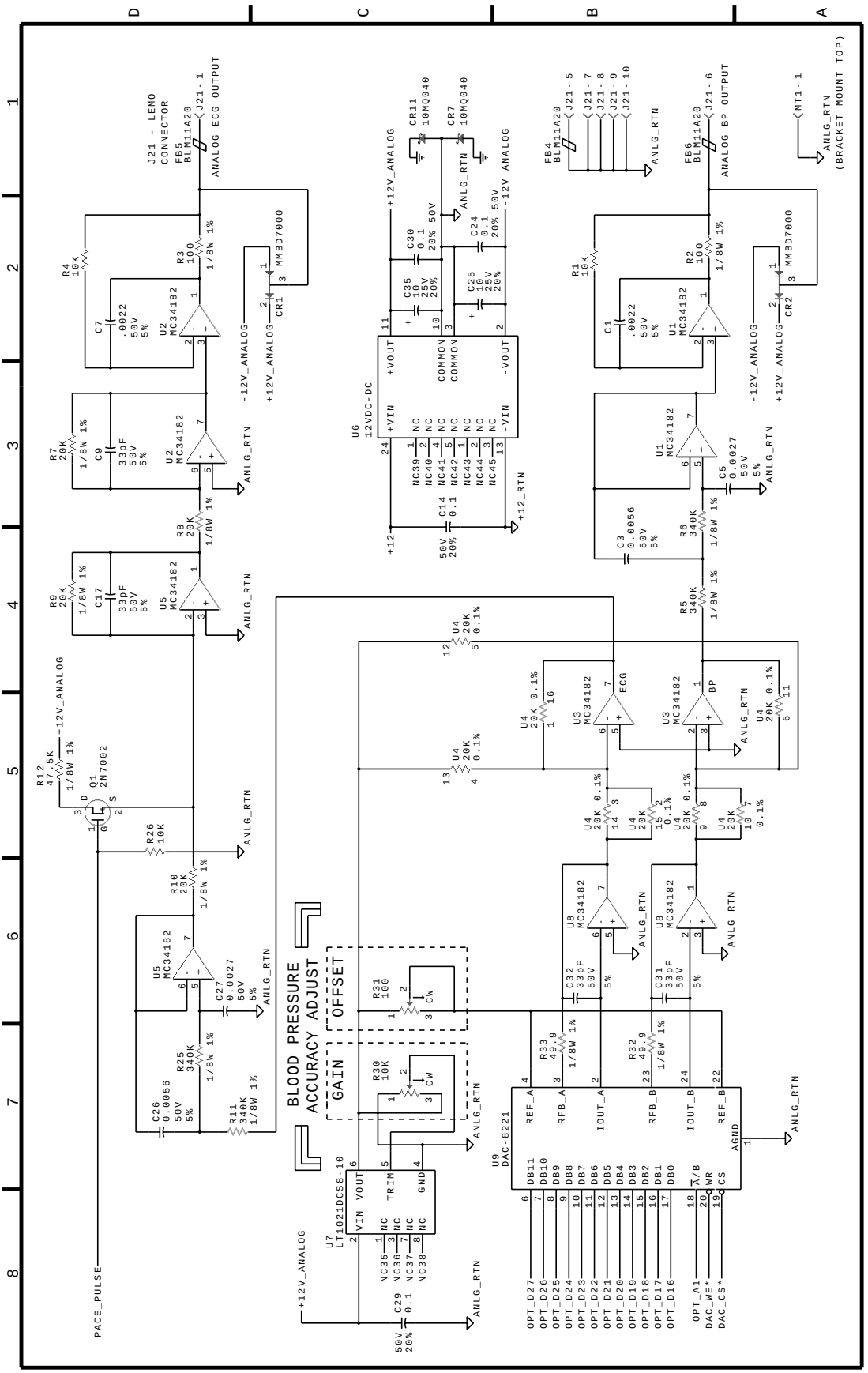
BLOOD PRESSURE ACCURACY ADJUST
GAIN
OFFSET
J21 - LEMO CONNECTOR
ANALOG ECG OUTPUT
ANALOG BP OUTPUT
(BRACKET MOUNT TOP)
ANLG_RTN
+12V_ANALOG
-12V_ANALOG
+12_RTN
PACE_PULSE
U6 12VDC-DC
U9 DAC-8221
U7 LT1021DCS8-10

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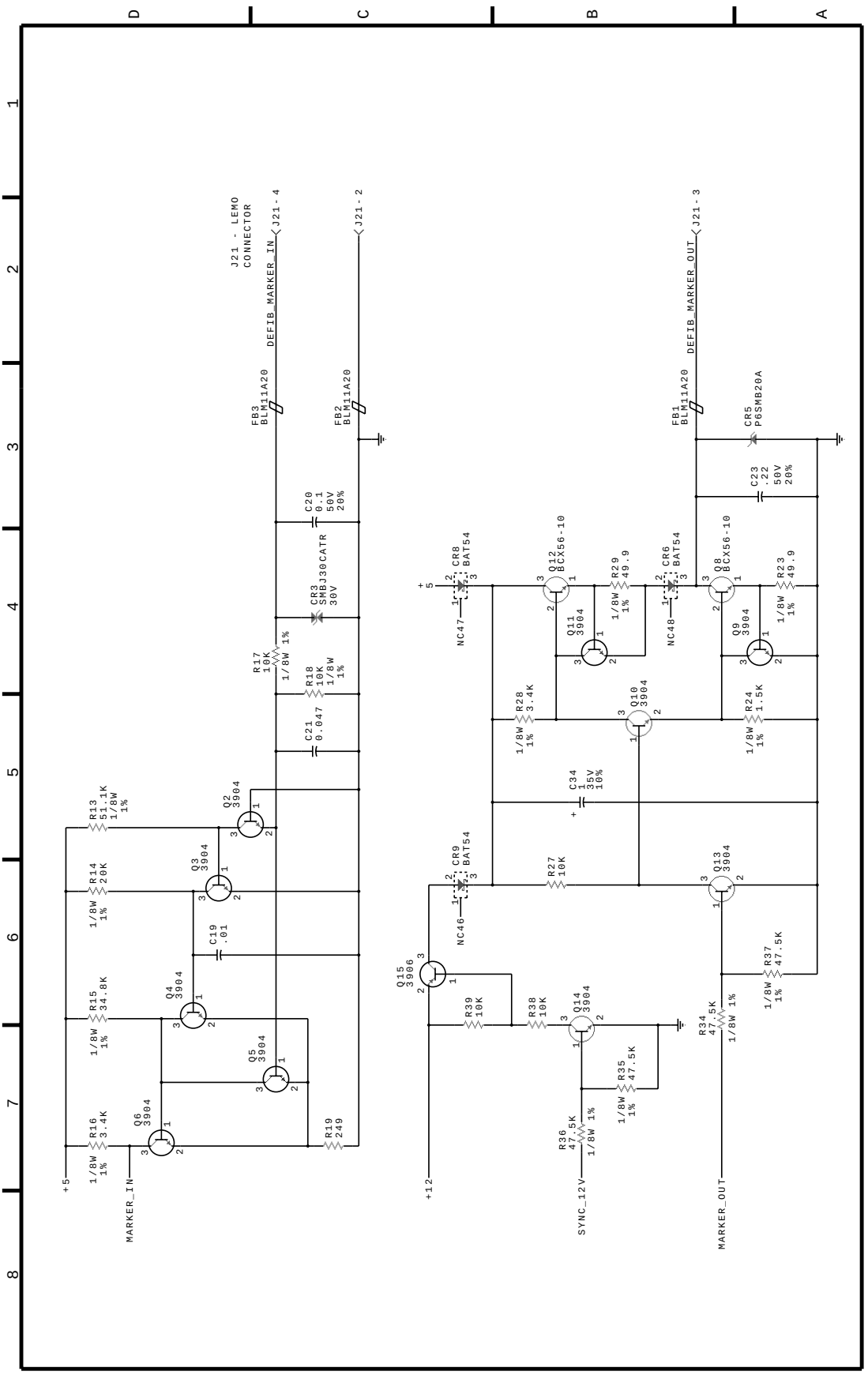
J21 - LEMO CONNECTOR
DEFIB_MARKER_IN
DEFIB_MARKER_OUT
MARKER_IN
MARKER_OUT
SYNC_12V
+5
+12
FB1 BLM11A20
FB2 BLM11A20
FB3 BLM11A20
CR5 P6SMB20A
CR3 SMBJ30CATR 30V
C20 0.1 50V 20%
C21 0.047
C23 .22 50V 20%
C34 35V 10%
C19 .01
R17 10K 1/8W 1%
R18 10K 1/8W 1%
R19 249
R13 51.1K 1/8W 1%
R14 20K 1/8W 1%
R15 34.8K 1/8W 1%
R16 3.4K 1/8W 1%
R23 49.9 1/8W 1%
R24 1.5K 1/8W 1%
R27 10K
R28 3.4K 1/8W 1%
R29 49.9 1/8W 1%
R34 47.5K 1/8W 1%
R35 47.5K 1/8W 1%
R36 47.5K 1/8W 1%
R37 47.5K 1/8W 1%
R38 10K
R39 10K
Q2 3904
Q3 3904
Q4 3904
Q5 3904
Q6 3904
Q8 BCX56-10
Q9 3904
Q10 3904
Q11 3904
Q12 BCX56-10
Q13 3904
Q14 3904
Q15 3906
CR6 BAT54
CR8 BAT54
CR9 BAT54
NC46
NC47
NC48

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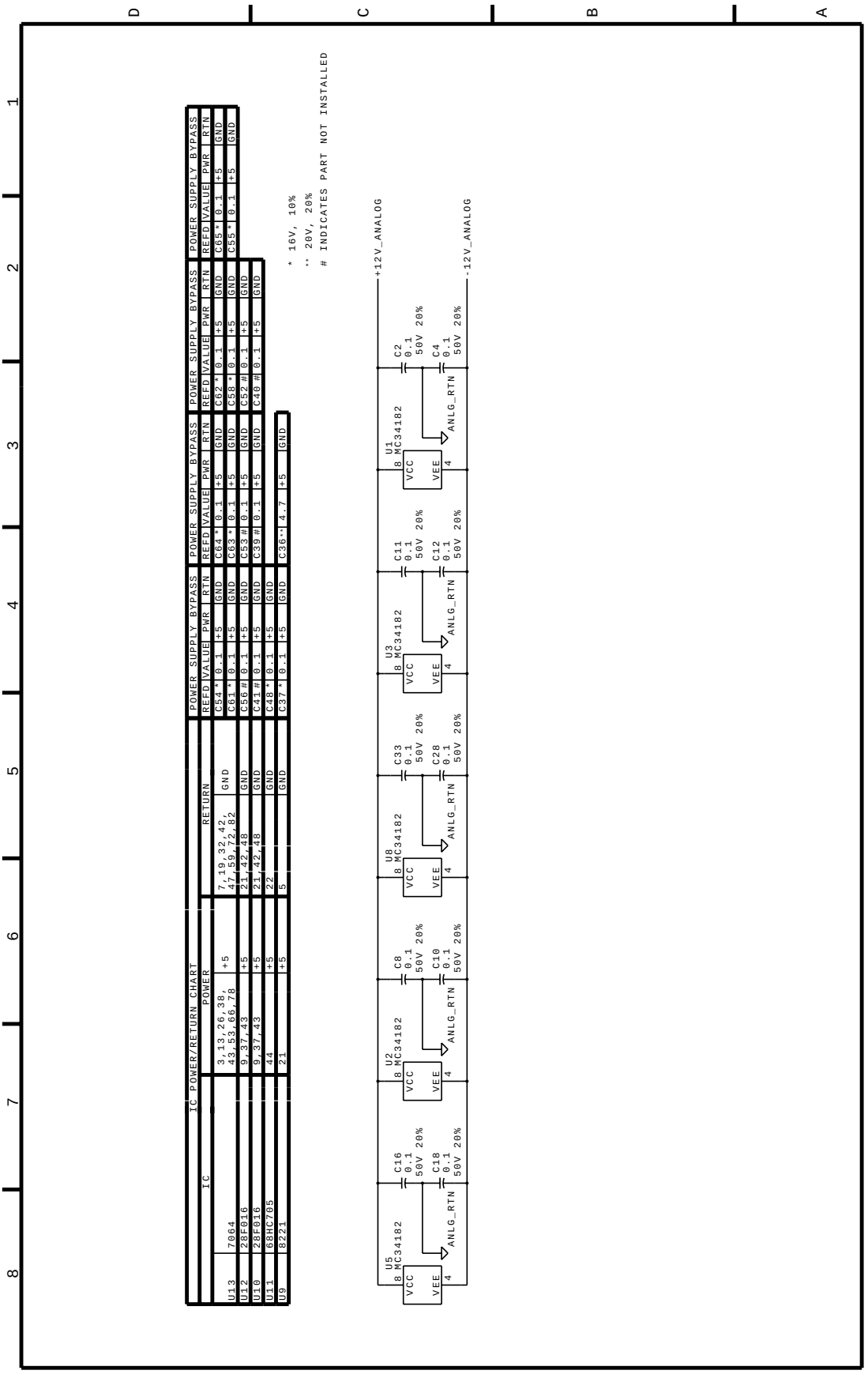
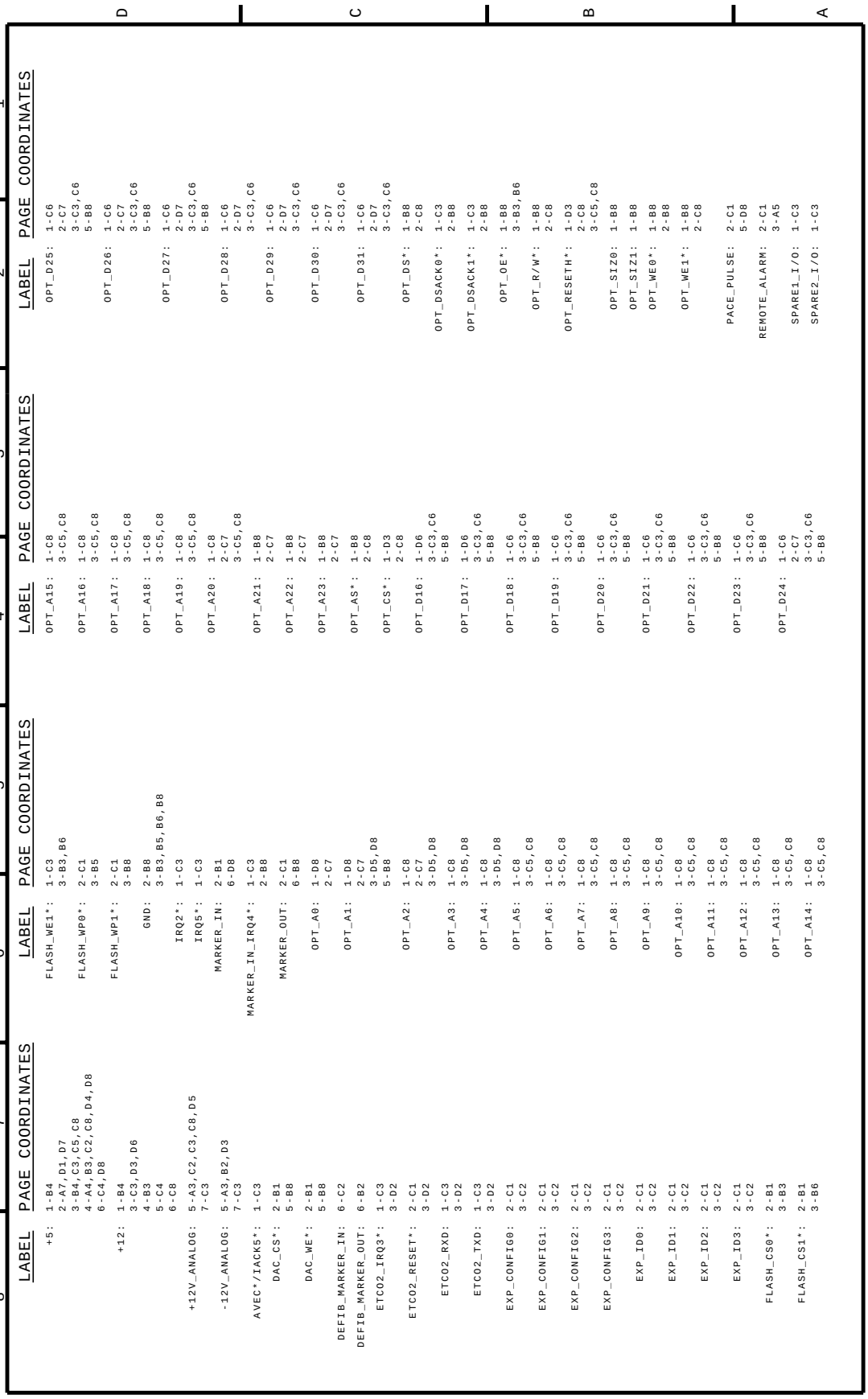

IC POWER/RETURN CHART
IC
POWER
RETURN
POWER SUPPLY BYPASS
REFD VALUE PWR RTN
U13 7064 3,13,26,38, 43,53,66,78 +5 7,19,32,42, 47,59,72,82 GND C54* 0.1 +5 GND C61* 0.1 +5 GND C64* 0.1 +5 GND C62* 0.1 +5 GND C65* 0.1 +5 GND
U12 28F016 9,37,43 +5 21,42,48 GND C56# 0.1 +5 GND C53# 0.1 +5 GND C58* 0.1 +5 GND C55* 0.1 +5 GND
U10 28F016 9,37,43 +5 21,42,48 GND C41# 0.1 +5 GND C39# 0.1 +5 GND C52# 0.1 +5 GND
U11 68HC705 44 +5 22 GND C48* 0.1 +5 GND C40# 0.1 +5 GND
U9 8221 21 +5 5 GND C37* 0.1 +5 GND C36** 4.7 +5 GND
* 16V, 10%
** 20V, 20%
# INDICATES PART NOT INSTALLED
+12V_ANALOG
-12V_ANALOG
U5 8 MC34182 VCC VEE 4
U2 8 MC34182 VCC VEE 4
U8 8 MC34182 VCC VEE 4
U3 8 MC34182 VCC VEE 4
U1 8 MC34182 VCC VEE 4
C16 0.1 50V 20%
C18 0.1 50V 20%
C8 0.1 50V 20%
C10 0.1 50V 20%
C33 0.1 50V 20%
C28 0.1 50V 20%
C11 0.1 50V 20%
C12 0.1 50V 20%
C2 0.1 50V 20%
C4 0.1 50V 20%
ANLG_RTN

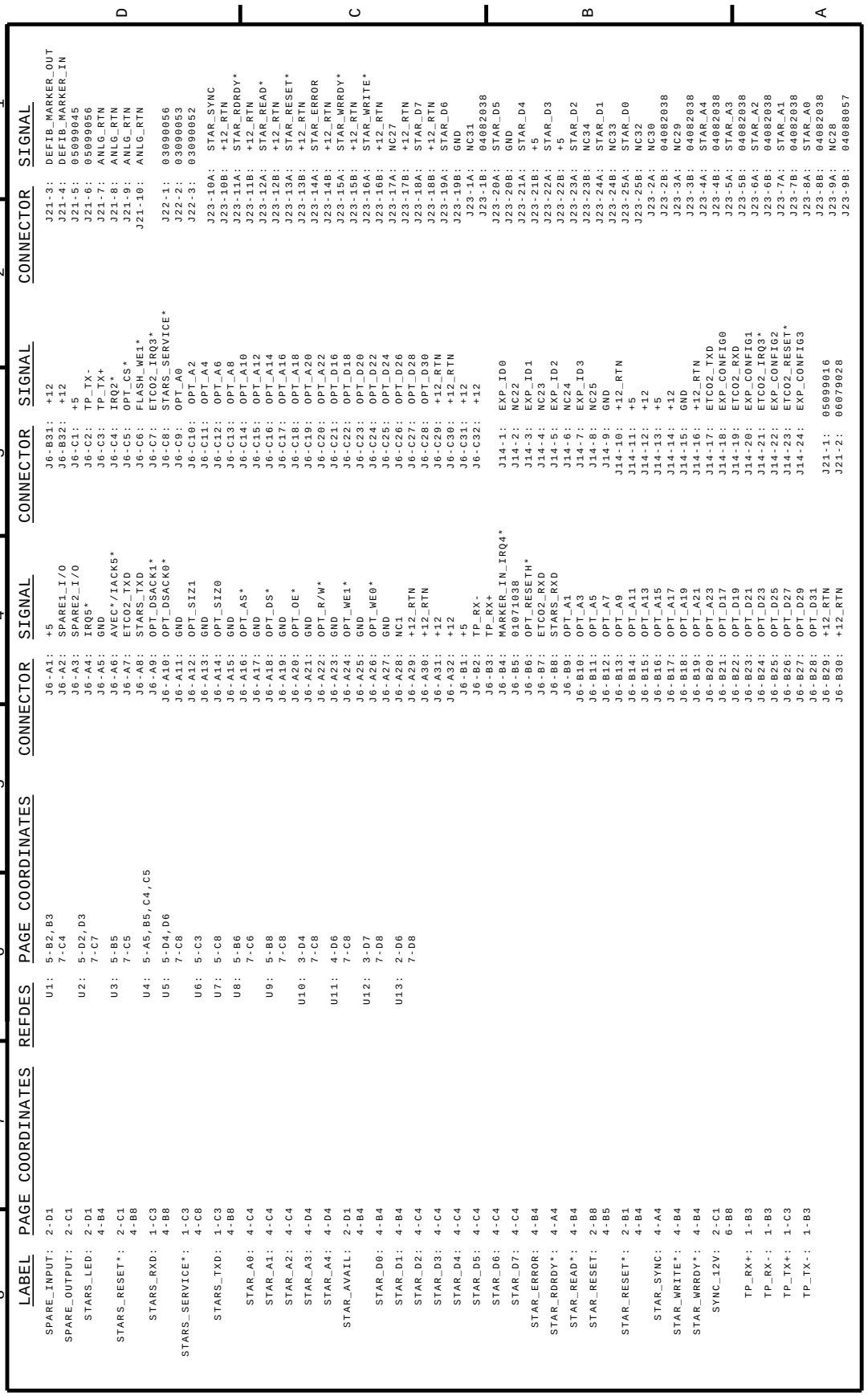


LABEL	PAGE COORDINATES
+5:	1-B4
	2-A7,D1,D7
	3-B4,C3,C5,C8
	4-A4,B3,C2,C8,D4,D8
	6-C4,D8
+12:	1-B4
	3-C3,D3,D6
	4-B3
	5-C4
	6-C8
+12V_ANALOG:	5-A3,C2,C3,C8,D5
	7-C3
-12V_ANALOG:	5-A3,B2,D3
	7-C3
AVEC*/IACK5*:	1-C3
DAC_CS*:	2-B1
	5-B8
DAC_WE*:	2-B1
	5-B8
DEFIB_MARKER_IN:	6-C2
DEFIB_MARKER_OUT:	6-B2
ETCO2_IRQ3*:	1-C3
	3-D2
ETCO2_RESET*:	2-C1
	3-D2
ETCO2_RXD:	1-C3
	3-D2
ETCO2_TXD:	1-C3
	3-D2
EXP_CONFIG0:	2-C1
	3-C2
EXP_CONFIG1:	2-C1
	3-C2
EXP_CONFIG2:	2-C1
	3-C2
EXP_CONFIG3:	2-C1
	3-C2
EXP_ID0:	2-C1
	3-C2
EXP_ID1:	2-C1
	3-C2
EXP_ID2:	2-C1
	3-C2
EXP_ID3:	2-C1
	3-C2
FLASH_CS0*:	2-B1
	3-B3
FLASH_CS1*:	2-B1
	3-B6

LABEL	PAGE COORDINATES
FLASH_WE1*:	1-C3
	3-B3,B6
FLASH_WP0*:	2-C1
	3-B5
FLASH_WP1*:	2-C1
	3-B8
GND:	2-B8
	3-B3,B5,B6,B8
IRQ2*:	1-C3
IRQ5*:	1-C3
MARKER_IN:	2-B1
	6-D8
MARKER_IN_IRQ4*:	1-C3
	2-B8
MARKER_OUT:	2-C1
	6-B8
OPT_A0:	1-D8
	2-C7
OPT_A1:	1-D8
	2-C7
	3-D5,D8
	5-B8
OPT_A2:	1-C8
	2-C7
	3-D5,D8
OPT_A3:	1-C8
	3-D5,D8
OPT_A4:	1-C8
	3-D5,D8
OPT_A5:	1-C8
	3-C5,C8
OPT_A6:	1-C8
	3-C5,C8
OPT_A7:	1-C8
	3-C5,C8
OPT_A8:	1-C8
	3-C5,C8
OPT_A9:	1-C8
	3-C5,C8
OPT_A10:	1-C8
	3-C5,C8
OPT_A11:	1-C8
	3-C5,C8
OPT_A12:	1-C8
	3-C5,C8
OPT_A13:	1-C8
	3-C5,C8
OPT_A14:	1-C8
	3-C5,C8

LABEL	PAGE COORDINATES
OPT_A15:	1-C8
	3-C5,C8
OPT_A16:	1-C8
	3-C5,C8
OPT_A17:	1-C8
	3-C5,C8
OPT_A18:	1-C8
	3-C5,C8
OPT_A19:	1-C8
	3-C5,C8
OPT_A20:	1-C8
	2-C7
	3-C5,C8
OPT_A21:	1-B8
	2-C7
OPT_A22:	1-B8
	2-C7
OPT_A23:	1-B8
	2-C7
OPT_AS*:	1-B8
	2-C8
OPT_CS*:	1-D3
	2-C8
OPT_D16:	1-D6
	3-C3,C6
	5-B8
OPT_D17:	1-D6
	3-C3,C6
	5-B8
OPT_D18:	1-C6
	3-C3,C6
	5-B8
OPT_D19:	1-C6
	3-C3,C6
	5-B8
OPT_D20:	1-C6
	3-C3,C6
	5-B8
OPT_D21:	1-C6
	3-C3,C6
	5-B8
OPT_D22:	1-C6
	3-C3,C6
	5-B8
OPT_D23:	1-C6
	3-C3,C6
	5-B8
OPT_D24:	1-C6
	2-C7
	3-C3,C6
	5-B8

LABEL	PAGE COORDINATES
OPT_D25:	1-C6
	2-C7
	3-C3,C6
	5-B8
OPT_D26:	1-C6
	2-C7
	3-C3,C6
	5-B8
OPT_D27:	1-C6
	2-D7
	3-C3,C6
	5-B8
OPT_D28:	1-C6
	2-D7
	3-C3,C6
OPT_D29:	1-C6
	2-D7
	3-C3,C6
OPT_D30:	1-C6
	2-D7
	3-C3,C6
OPT_D31:	1-C6
	2-D7
	3-C3,C6
OPT_DS*:	1-B8
	2-C8
OPT_DSACK0*:	1-C3
	2-B8
OPT_DSACK1*:	1-C3
	2-B8
OPT_OE*:	1-B8
	3-B3,B6
OPT_R/W*:	1-B8
	2-C8
OPT_RESETH*:	1-D3
	2-C8
	3-C5,C8
OPT_SIZ0:	1-B8
OPT_SIZ1:	1-B8
OPT_WE0*:	1-B8
	2-B8
OPT_WE1*:	1-B8
	2-C8
PACE_PULSE:	2-C1
	5-D8
REMOTE_ALARM:	2-C1
	3-A5
SPARE1_I/O:	1-C3
SPARE2_I/O:	1-C3



LABEL	PAGE COORDINATES	REFDES	PAGE COORDINATES	CONNECTOR	SIGNAL	CONNECTOR	SIGNAL	CONNECTOR	SIGNAL
SPARE_INPUT:	2-D1	U1:	5-B2,B3	J6-A1:	+5	J6-B31:	+12	J21-3:	DEFIB_MARKER_OUT
			7-C4	J6-A2:	SPARE1_I/O	J6-B32:	+12	J21-4:	DEFIB_MARKER_IN
SPARE_OUTPUT:	2-C1	U2:	5-D2,D3	J6-A3:	SPARE2_I/O	J6-C1:	+5	J21-5:	05099045
STARS_LED:	2-D1		7-C7	J6-A4:	IRQ5*	J6-C2:	TP_TX-	J21-6:	05099056
	4-B4			J6-A5:	GND	J6-C3:	TP_TX+	J21-7:	ANLG_RTN
		U3:	5-B5	J6-A6:	AVEC*/IACK5*	J6-C4:	IRQ2*	J21-8:	ANLG_RTN
STARS_RESET*:	2-C1		7-C5	J6-A7:	ETCO2_TXD	J6-C5:	OPT_CS*	J21-9:	ANLG_RTN
	4-B8			J6-A8:	STARS_TXD	J6-C6:	FLASH_WE1*	J21-10:	ANLG_RTN
STARS_RXD:	1-C3	U4:	5-A5,B5,C4,C5	J6-A9:	OPT_DSACK1*	J6-C7:	ETCO2_IRQ3*		
	4-B8	U5:	5-D4,D6	J6-A10:	OPT_DSACK0*	J6-C8:	STARS_SERVICE*	J22-1:	03090056
STARS_SERVICE*:	1-C3		7-C8	J6-A11:	GND	J6-C9:	OPT_A0	J22-2:	03090053
	4-C8	U6:	5-C3	J6-A12:	OPT_SIZ1	J6-C10:	OPT_A2	J22-3:	03090052
STARS_TXD:	1-C3		4-C8	J6-A13:	GND	J6-C11:	OPT_A4		
	4-B8	U7:	5-C8	J6-A14:	OPT_SIZ0	J6-C12:	OPT_A6	J23-10A:	STAR_SYNC
		U8:	5-B6	J6-A15:	GND	J6-C13:	OPT_A8	J23-10B:	+12_RTN
STAR_A0:	4-C4		7-C6	J6-A16:	OPT_AS*	J6-C14:	OPT_A10	J23-11A:	STAR_RDRDY*
STAR_A1:	4-C4	U9:	5-B8	J6-A17:	GND	J6-C15:	OPT_A12	J23-11B:	+12_RTN
STAR_A2:	4-C4		7-C8	J6-A18:	OPT_DS*	J6-C16:	OPT_A14	J23-12A:	STAR_READ*
STAR_A3:	4-D4	U10:	3-D4	J6-A19:	GND	J6-C17:	OPT_A16	J23-12B:	+12_RTN
			7-C8	J6-A20:	OPT_OE*	J6-C18:	OPT_A18	J23-13A:	STAR_RESET*
STAR_A4:	4-D4	U11:	4-D6	J6-A21:	GND_R/W*	J6-C19:	OPT_A20	J23-13B:	+12_RTN
			7-C8	J6-A22:	OPT_R/W*	J6-C20:	OPT_A22	J23-14A:	STAR_ERROR
STAR_AVAIL:	2-D1			J6-A23:	GND	J6-C21:	OPT_D16	J23-14B:	+12_RTN
	4-B4	U12:	3-D7	J6-A24:	OPT_WE1*	J6-C22:	OPT_D18	J23-15A:	STAR_WRRDY*
STAR_D0:	4-B4		7-D8	J6-A25:	GND	J6-C23:	OPT_D20	J23-15B:	+12_RTN
				J6-A26:	OPT_WE0*	J6-C24:	OPT_D22	J23-16A:	STAR_WRITE*
STAR_D1:	4-B4	U13:	2-D6	J6-A27:	GND	J6-C25:	OPT_D24	J23-16B:	+12_RTN
			7-D8	J6-A28:	NC1	J6-C26:	OPT_D26	J23-17A:	NC27
STAR_D2:	4-C4			J6-A29:	+12_RTN	J6-C27:	OPT_D28	J23-17B:	+12_RTN
STAR_D3:	4-C4			J6-A30:	+12_RTN	J6-C28:	OPT_D30	J23-18A:	STAR_D7
STAR_D4:	4-C4			J6-A31:	+12	J6-C29:	+12_RTN	J23-18B:	+12_RTN
STAR_D5:	4-C4			J6-A32:	+12	J6-C30:	+12_RTN	J23-19A:	STAR_D6
STAR_D6:	4-C4			J6-B1:	+5	J6-C31:	+12	J23-19B:	GND
STAR_D7:	4-C4			J6-B2:	TP_RX-	J6-C32:	+12	J23-1A:	NC31
STAR_ERROR:	4-B4			J6-B3:	TP_RX+			J23-1B:	04082038
STAR_RDRDY*:	4-A4			J6-B4:	MARKER_IN_IRQ4*	J14-1:	EXP_ID0	J23-20A:	STAR_D5
STAR_READ*:	4-B4			J6-B5:	01071038	J14-2:	NC22	J23-20B:	GND
STAR_RESET:	2-B8			J6-B6:	OPT_RESETH*	J14-3:	EXP_ID1	J23-21A:	STAR_D4
	4-B5			J6-B7:	ETCO2_RXD	J14-4:	NC23	J23-21B:	+5
STAR_RESET*:	2-B1			J6-B8:	STARS_RXD	J14-5:	EXP_ID2	J23-22A:	STAR_D3
	4-B4			J6-B9:	OPT_A1	J14-6:	NC24	J23-22B:	+5
STAR_SYNC:	4-A4			J6-B10:	OPT_A3	J14-7:	EXP_ID3	J23-23A:	STAR_D2
STAR_WRITE*:	4-B4			J6-B11:	OPT_A5	J14-8:	NC25	J23-23B:	NC34
STAR_WRRDY*:	4-B4			J6-B12:	OPT_A7	J14-9:	GND	J23-24A:	STAR_D1
SYNC_12V:	2-C1			J6-B13:	OPT_A9	J14-10:	+12_RTN	J23-24B:	NC33
	6-B8			J6-B14:	OPT_A11	J14-11:	+5	J23-25A:	STAR_D0
				J6-B15:	OPT_A13	J14-12:	+12	J23-25B:	NC32
TP_RX+:	1-B3			J6-B16:	OPT_A15	J14-13:	+5	J23-2A:	NC30
TP_RX-:	1-B3			J6-B17:	OPT_A17	J14-14:	+12	J23-2B:	04082038
TP_TX+:	1-C3			J6-B18:	OPT_A19	J14-15:	GND	J23-3A:	NC29
TP_TX-:	1-B3			J6-B19:	OPT_A21	J14-16:	+12_RTN	J23-3B:	04082038
				J6-B20:	OPT_A23	J14-17:	ETCO2_TXD	J23-4A:	STAR_A4
				J6-B21:	OPT_D17	J14-18:	EXP_CONFIG0	J23-4B:	04082038
				J6-B22:	OPT_D19	J14-19:	ETCO2_RXD	J23-5A:	STAR_A3
				J6-B23:	OPT_D21	J14-20:	EXP_CONFIG1	J23-5B:	04082038
				J6-B24:	OPT_D23	J14-21:	ETCO2_IRQ3*	J23-6A:	STAR_A2
				J6-B25:	OPT_D25	J14-22:	EXP_CONFIG2	J23-6B:	04082038
				J6-B26:	OPT_D27	J14-23:	ETCO2_RESET*	J23-7A:	STAR_A1
				J6-B27:	OPT_D29	J14-24:	EXP_CONFIG3	J23-7B:	04082038
				J6-B28:	OPT_D31			J23-8A:	STAR_A0
				J6-B29:	+12_RTN	J21-1:	05099016	J23-8B:	04082038
				J6-B30:	+12_RTN	J21-2:	06079028	J23-9A:	NC28
								J23-9B:	04088057

Switches and Controls PN 801318-001A

Listed below are all switches, controls, and LEDs found on the circuit board, pn 801318-001A.

Table 4-7. Switches and Controls

Designator	Name	Function
DS1	Green light-emitting diode	STARS status LED
R30	Res, Var, 10K	Gain adjust
R31	Res, Var, 100Ω	Offset adjust

PCB Connectors PN 801318-001A

Pin-by-pin descriptions and the signal names for each internal PCB connector are described below.

Table 4-8. Connector J6 (96-Pin Option Board Interface Connector)

Pin	Name	Input/ Output	Description
A1	+5	I	+5 V power
A2	SPARE1_I/O	I/O	Processor spare
A3	SPARE2_I/O	I/O	Processor spare
A4	OPT_BRD_IRQ5*	O	Interrupt
A5	OPT_BRD_AVAIL*	O	Option board available
A6	AVEC*/IACK5*	I/O	Acknowledge
A7	ETCO2_TXD	O	ETCO2 transmit
A8	STARS_TXD	O	STARS transmit
A9	DSACK1*	O	Data strobe acknowledge
A10	DSACK0*	O	Data strobe acknowledge
A11	GND	O	+5 V power return
A12	SIZE1	I	Processor bus site to transfer
A13	GND	O	+5 V power return
A14	SIZE0	I	Processor bus site to transfer
A15	GND	O	+5 V power return
A16	AS*	I	Processor address strobe
A17	GND	O	+5 V power return
A18	DS*	I	Processor data strobe
A19	GND	O	+5 V power return
A20	OE*	I	Processor read strobe
A21	GND	O	+5 V power return
A22	R/W*	I	Processor read/write strobe
A23	GND	O	+5 V power return
A24	WE1*	I	Processor word write strobe
A25	GND	O	+5 V power return
A26	WE0*	I	Processor byte write strobe
A27	GND	O	+5 V power return
A28	NC		
A29	+12_RTN	O	+12 V power return
A30	+12_RTN	O	+12 V power return
A31	+12	I	+12 V power to option board
A32	+12	I	+12 V power to option board
B1	+5	I	+5 V POWER
B2	TP_RX-	O	Ethernet twisted pair RX-
B3	TP_RX+	O	Ethernet twisted pair RX+
B4	MARKER_IN_IRQ4*	O	Processor interrupt from Marker_In
B5	BOOT_SELECT*	O	Boot source

Table 4-8. Connector J6 (96-Pin Option Board Interface Connector)			
B6	RESETH*	I	Processor hard reset
B7	ETCO2_RXD	O	ETCO2 receive
B8	STARTS_RXD	O	STARS receive
B9	A1	I	Processor address signal
B10	A3	I	Processor address signal
B11	A5	I	Processor address signal
B12	A7	I	Processor address signal
B13	A9	I	Processor address signal
B14	A11	I	Processor address signal
B15	A13	I	Processor address signal
B16	A15	I	Processor address signal
B17	A17	I	Processor address signal
B18	A19	I	Processor address signal
B19	A21	I	Processor address signal
B20	A23	I	Processor address signal
B21	D17	I/O	Processor data signal
B22	D19	I/O	Processor data signal
B23	D21	I/O	Processor data signal
B24	D24	I/O	Processor data signal
B25	D25	I/O	Processor data signal
B26	D27	I/O	Processor data signal
B27	D29	I/O	Processor data signal
B28	D31	I/O	Processor data signal
B29	+12_RTN	O	+12 V power return
B30	+12_RTN	O	+12 V power return
B31	+12	I	+12 V power to option board
B32	+12	I	+12 V power to option board
C1	+5	I	+5 V power
C2	TP_TX-	I	Ethernet twisted pair TX-
C3	TP_TX+	I	Ethernet twisted pair TX+
C4	OPT_BRD_IRQ2*	O	Option board interrupt to processor
C5	OPT_BRD CS*	I	Option board chip select
C6	FLASH_WE1*	I	Flash write strobe
C7	ETCO2_IRQ3*	O	ETCO2 interrupt
C8	STARS_SERVICE*	I	STARS service mode
C9	A0	I	Processor address signal
C10	A2	I	Processor address signal
C11	A4	I	Processor address signal
C12	A6	I	Processor address signal
C13	A8	I	Processor address signal
C14	A10	I	Processor address signal
C15	A12	I	Processor address signal
C16	A14	I	Processor address signal
C17	A16	I	Processor address signal
C18	A18	I	Processor address signal

Table 4-8. Connector J6 (96-Pin Option Board Interface Connector)			
C19	A20	I	Processor address signal
C20	A22	I	Processor address signal
C21	D16	I/O	Processor data signal
C22	D18	I/O	Processor data signal
C23	D20	I/O	Processor data signal
C24	S22	I/O	Processor data signal
C25	D24	I/O	Processor data signal
C26	D26	I/O	Processor data signal
C27	D28	I/O	Processor data signal
C28	D30	I/O	Processor data signal
C29	+12_RTN	O	+12 V power return
C30	+12_RTN	O	+12 V power return
C31	+12	I	+12 V power to option board
C32	+12	I	+12V power to option board

Table 4-9. Connector J14 (24-Pin EtCO2 Connector)			
Pin	**Name**	**Input/ Output**	**Description**
1	EXP_IDØ	I	Board ID0 from EtCO2
2	NC		
3	EXP_ID1	I	Board ID1 from EtCO2
4	NC		
5	EXP_ID2	I	Board ID2 from EtCO2
6	NC		
7	EXP_ID3	I	Board ID3 from EtCO2
8	NC		
9	GND	I	+5 V power return
10	+12_RTN	I	+12 V power return
11	+5	O	+5 V power to EtCO2
12	+12	O	+12 V power to EtCO2
13	+5	O	+5 V power to EtCO2
14	+12	O	+12 V power to EtCO2
15	GND	I	+5 V power return
16	+12_RTN	I	+12 V power return
17	ETCO2_TXD	O	Transmit data to EtCO2
18	EXP_CONFIGØ	O	Boot strap 0 to EtCO2
19	ETCO2_RXD	I	Receive data from EtCO2
20	EXP_CONFIG1	O	Boot strap 1 to EtCO2
21	ETCO2_IRQ3*	I	IRQ from EtCO2
22	EXP_CONFIG2	O	Boot strap 2 to EtCO2
23	ETCO2_RESET*	O	Reset to EtCO2
24	EXP_CONFIG3	O	Boot strap 3 to EtCO2

Table 4-10. Connector J21 (6-Pin Analog Outputs/Defib Sync Connector)

Pin	Name	Input/ Output	Description
1	ANALOG ECG OUT	O	Analog ECG output signal
2	GND	I	Digital return
3	DEFIB_MARKER_OUT	O	Digital defib output synchronization signal
4	DEFIB_MARKER_IN	I	Digital defib input signal
5	ANLG_RTN	I	Analog return
6	ANALOG BP OUT	O	Analog BP output signal

Table 4-11. Connector J22 (9-Pin Remote Alarm Connector)

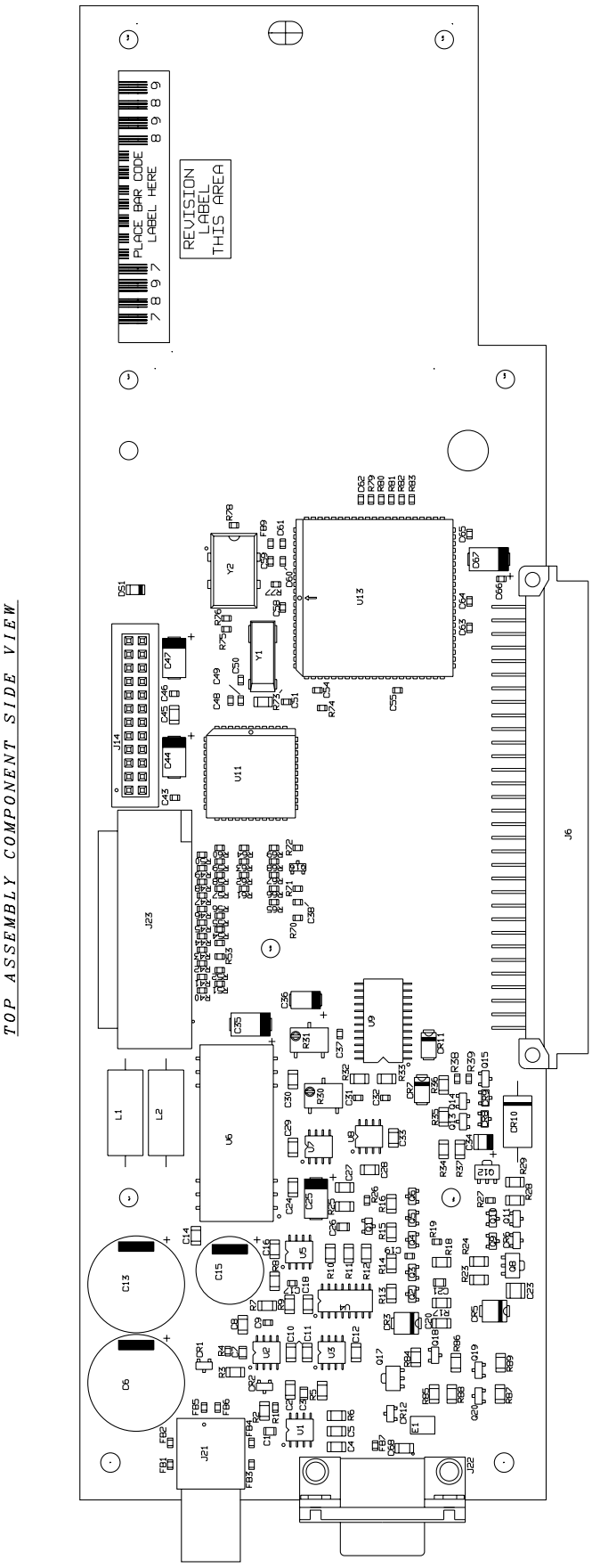
Pin	Name	Input/ Output	Description
1	+12	O	+12 V power to isolation relay
2	NC		
3	NC		
4	NC		
5	NC		
6	NC		
7	+12_RTN	I	+12 V power return from isolation relay
8		O	Control signal
9	NC		

Table 4-12. Connector J23 (50-Pin Special Thermal Array Recorder Connector)

Pin	Name	Input/ Output	Description
1A	NC		
2A	NC		
3A	NC		
4A	A4	O	Address signal
5A	A3	O	Address signal
6A	A2	O	Address signal
7A	A1	O	Address signal
8A	A0	O	Address signal
9A	NC		
10A	STAR_SYNC	I	Input from STAR writer
11A	STAR_RDRDY*	I	Input from STAR writer
12A	STAR_READ*	O	Output to STAR writer
13A	STAR_RESET*	O	Output to STAR writer
14A	STAR_ERROR	I	Input from STAR writer
15A	STAR_WRRDY*	I	Input from STAR writer
16A	STAR_WRITE*	O	Output to STAR writer
17A	NC		
18A	D7	I/O	Data signal
19A	D6	I/O	Data signal

Table 4-12. Connector J23 (50-Pin Special Thermal Array Recorder Connector)			
20A	D5	I/O	Data signal
21A	D4	I/O	Data signal
22A	D3	I/O	Data signal
23A	D2	I/O	Data signal
24A	D1	I/O	Data signal
25A	D0	I/O	Data signal
1B	+12	O	+12 V power to STAR writer
2B	+12	O	+12 V power to STAR writer
3B	+12	O	+12 V power to STAR writer
4B	+12	O	+12 V power to STAR writer
5B	+12	O	+12 V power to STAR writer
6B	+12	O	+12 V power to STAR writer
7B	+12	O	+12 V power to STAR writer
8B	+12	O	+12 V power to STAR writer
9B	STAR_AVAIL	I	STAR available
10B	+12_RTN	I	+12 V power return
11B	+12_RTN	I	+12 V power return
12B	+12_RTN	I	+12 V power return
13B	+12_RTN	I	+12 V power return
14B	+12_RTN	I	+12 V power return
15B	+12_RTN	I	+12 V power return
16B	+12_RTN	I	+12 V power return
17B	+12_RTN	I	+12 V power return
18B	+12_RTN	I	+12 V power return
19B	GND	I	+5 V return
20B	GND	I	+5 V return
21B	+5		+5 V power to STAR writer
22B	+5		+5 V power to STAR writer
23B	NC		
24B	NC		
25B	NC		

Parts Location Diagram PN 8013138-001A



TOP ASSEMBLY COMPONENT SIDE VIEW

NOTES:

1. UNLESS OTHERWISE SPECIFIED, ALL RESISTANCE VALUES ARE IN OHMS, ALL CAPACITANCE VALUES ARE IN MICROFARADS.
2. THE BAR SHOWN ON ALL POLARIZED CAPACITORS DENOTES POSITIVE TERMINAL.
3. THE FOLLOWING COMPONENTS APPEAR ON THE SILKSCREEN BUT ARE NOT USED ON THIS ASSEMBLY: W1, U10, U12, C39-C42, C52, C53, C56 AND C57.
4. CONNECTORS J21 AND J22 TO BE MOUNTED FLUSH TO THE CIRCUIT BOARD.
5. THE LEADS ON J22 DO NOT REQUIRE TRIMMING.
6. LEADS ON K1 TO BE TRIMMED AS SHORT AS POSSIBLE.

Parts List PN 801318-001A

Reference Designation	Description	Part Number	Qty
C1, 7	Cap, Cer, 2200pF, 5%, 50V, SM	1182-222	2
C2, 4, 8, 10-12, 14, 16, 18, 20, 24, 28-30, 33, 45, 68	Cap, Cer, 0.1µF, 20%, 50V	404370-001	17
C3, 26	Cap, Cer, 0.0056uF, 5%	1182-562	2
C5, 27	Cap, Cer, 0.0027µF, 5%, 50V, SM	1181-272	2
C6, 13	Cap, Al, 1500µF, 20%, 25V	414853-001	2
C9, 17, 31, 32, 50, 51	Cap, NPO, 33pF, 5%, 50V, SM	411576-004	6
C15	Cap, Al, 820µF, 20%, 25V, Radial	408957-001	1
C19, 49, 59	Cap, Cer, 0.1µF, 5%, 50V, SM	411575-012	3
C21	Cap, Cer, 0.047µF, 5%, 50V, SM	1182-824	1
C23	Cap, Cer, 0.22µF, 5%, 50V, SM	1182-224	1
C25, 35, 44, 47, 67	Cap, Tant, 10µF, 20%, 25V, SM	1152-106	5
C34	Cap, Tant, 1.0µF, 10%, 35V, SM	403907-001	1
C36	Cap, Tant, 4.7µF, 20%, 20V, SM	402004-001	1
C37, 38, 43, 46, 48, 54, 55, 58, 60-66	Cap, Cer, 0.1µF, 5%, 16V	411575-002	15
CR1, 2, 12	Diode Pair, Series, SM D7000	2013-201	3
CR3	Transorb, Bidirectional, 30V, 600W, SM SMBJ30	409052-001	1
CR5	Diode, Transient Voltage Suppression, SM P6SMB20AT1	403939-001	1
CR6, 8, 9	Diode, Schottky, SM BAT54	401985-001	3
CR7, 11	Diode, Schottky, Barrier, 1A, 40V, SM MBRS140T3	403187-001	2
CR10	Transient Voltage Suppressor, 16V, 10%, 1N6276	410936-001	1
DS1	Light-Emitting Diode, Green, SM 1206	414417-004	1
E1	Fuse, Mini, 750mA, Resettable	418285-001	1
FB1-7, 9	Ferrite Bead BLM11A20	414061-001	8
J6	Connector, Dual In-Line, 96-Pin	410538-001	1
J14	Connector, Vertical, 12-Pin	1847-024	1
J21	Connector, Receptacle, PC Edge, 6-Pin	403933-001	1
J22	Connector, Receptacle, Right Angle, 9-Pin with Rivets	17026-209	1
J23	Connector, 50-Pin	404289-001	1
L1, 2	Inductor, Power, 33µH, 1.81A, 10%	414943-001	2
Q1	Transistor, MOS-FET, N-Channel, SM 2N7002	402414-001	1
Q2-6, 9-11, 13, 14, 19, 20	Transistor, NPN, SM T3904	2511-001	12
Q8, 12	Transistor, NPN, SM BCX56-1	2712-056	2
Q15, 16, 18	Transistor, PNP, SM T3906	2511-101	3
Q17	Transistor, PNP, SM BCX53-10	2712-053	1

Reference Designation	Description	Part Number	Qty
R1, 4, 26, 27, 38, 39, 53, 61-72, 74, 75, 78-83	Res, Cer, 10K, 1%, 1/16W, SM	410334-013	27
R2, 3	Res, Cer, 100Ω, 1%, 1/8W, SM	1082-755	2
R5, 6, 11, 25	Res, Cer, 340K, 1%, 1/8W, SM	1082-782	4
R7-10, 14	Res, Cer, 20K, 1%, 1/8W, SM	1082-202	5
R12, 34-37	Res, Cer, 47.5K, 1%, 1/8W, SM	1082-757	5
R13	Res, Cer, 51.1K, 10%, 1/4W, SM	1082-772	1
R15	Res, Cer, 34.8K, 10%, 1/4W, SM	1082-791	1
R16, 28	Res, Cer, 3.4K, 1%, 1/8W, SM	1082-759	2
R17, 18, 85, 87-89	Res, Cer, 10K, 1%, 1/8W, SM	1082-104	6
R19	Res, Cer, 249Ω, 1%, 1/16W	410334-084	1
R23, 29, 32, 33	Res, Cer, 49.9 Ω, 1%, 1/8W, SM	1082-799	4
R24	Res, Cer, 1.5K, 1%, 1/8W, SM	1082-768	1
R30	Res, Var, 10K, SM	407457-004	1
R31	Res, Var, 100Ω, SM	407457-003	1
R40-52, 54-60, 77	Res, Cer, 49.9Ω, 1%, 1/16W, SM	410334-040	21
R73	Res, Chip, 4.7M, 1%, 1/8W, SM	1082-964	1
R76	Res, Cer, 1K, 1%, 1/16W, SM	410334-008	1
R84	Res, Cer, 26.7 Ω, 1%, 1/8W, SM	1082-909	1
R86	Res, Cer, 6.04K, 1%, 1/8W, SM	1082-930	1
U1-3, 5, 8	Operational Ampl, JFET, Dual, SM MC34182D	401292-001	5
U4	Res, Ntwk, 20K, 0.1%	414854-001	1
U6	Converter, DC-DC, Isolated, 12V	414845-001	1
U7	Voltage Reference, SM LT1021DCS8-10	401294-001	1
U9	DAC, 12-Bit, Quad, PLCC DAC8221FS	406512-001	1
U11	Microprocessor, Writer	415259-002	1
U13	EPLD, Programmed, Eagle 3000 Option PCB	415295-003	1
Y1	Crystal, 3.6864MHz	408828-001	1
Y2	Crystal Oscillator, 25.000mHz, SM	405676-001	1
	Schematic Diagram	SD801318-001	1
	Circuit Board	801319-001	1

Schematic Diagram SD801318-001A

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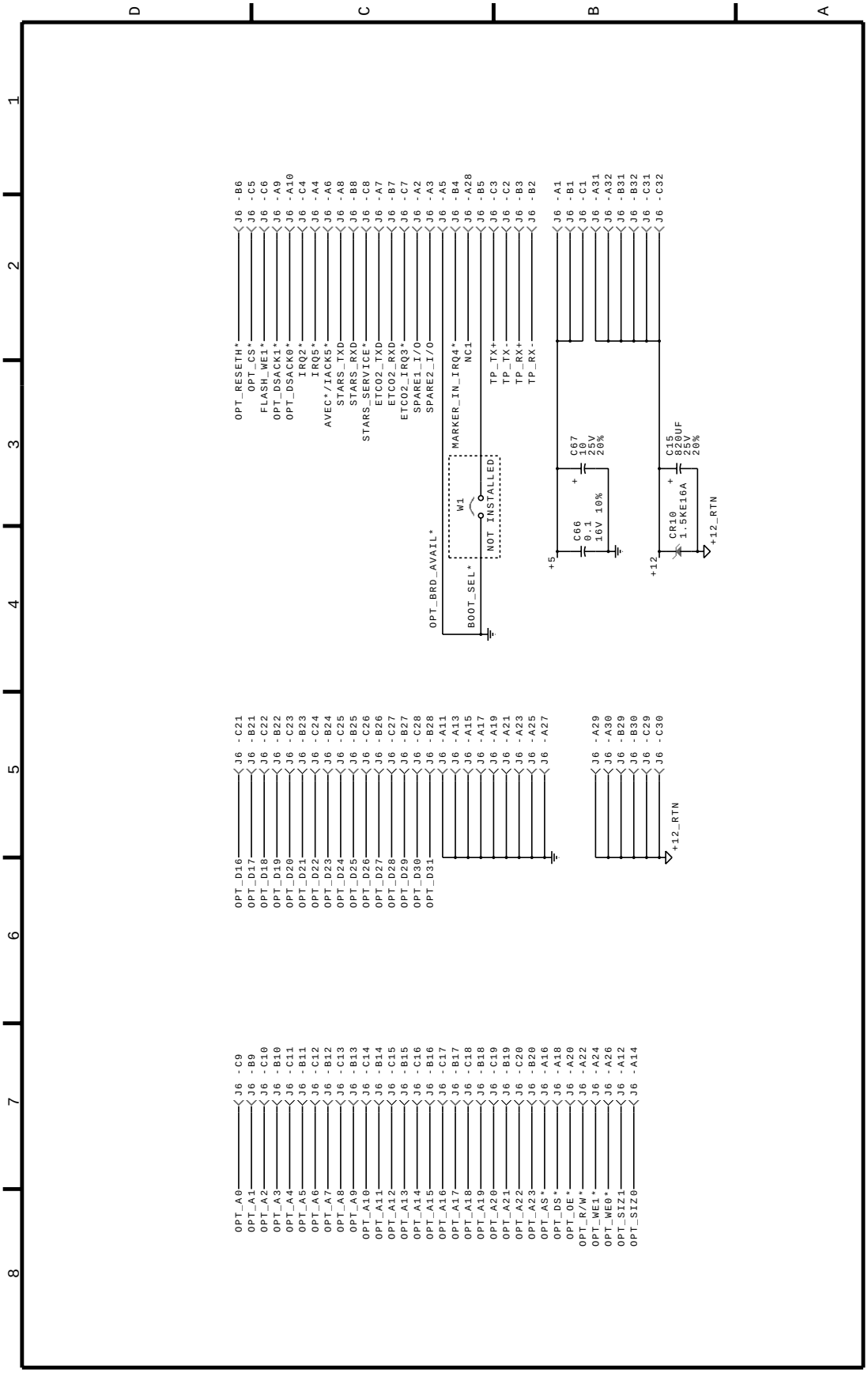

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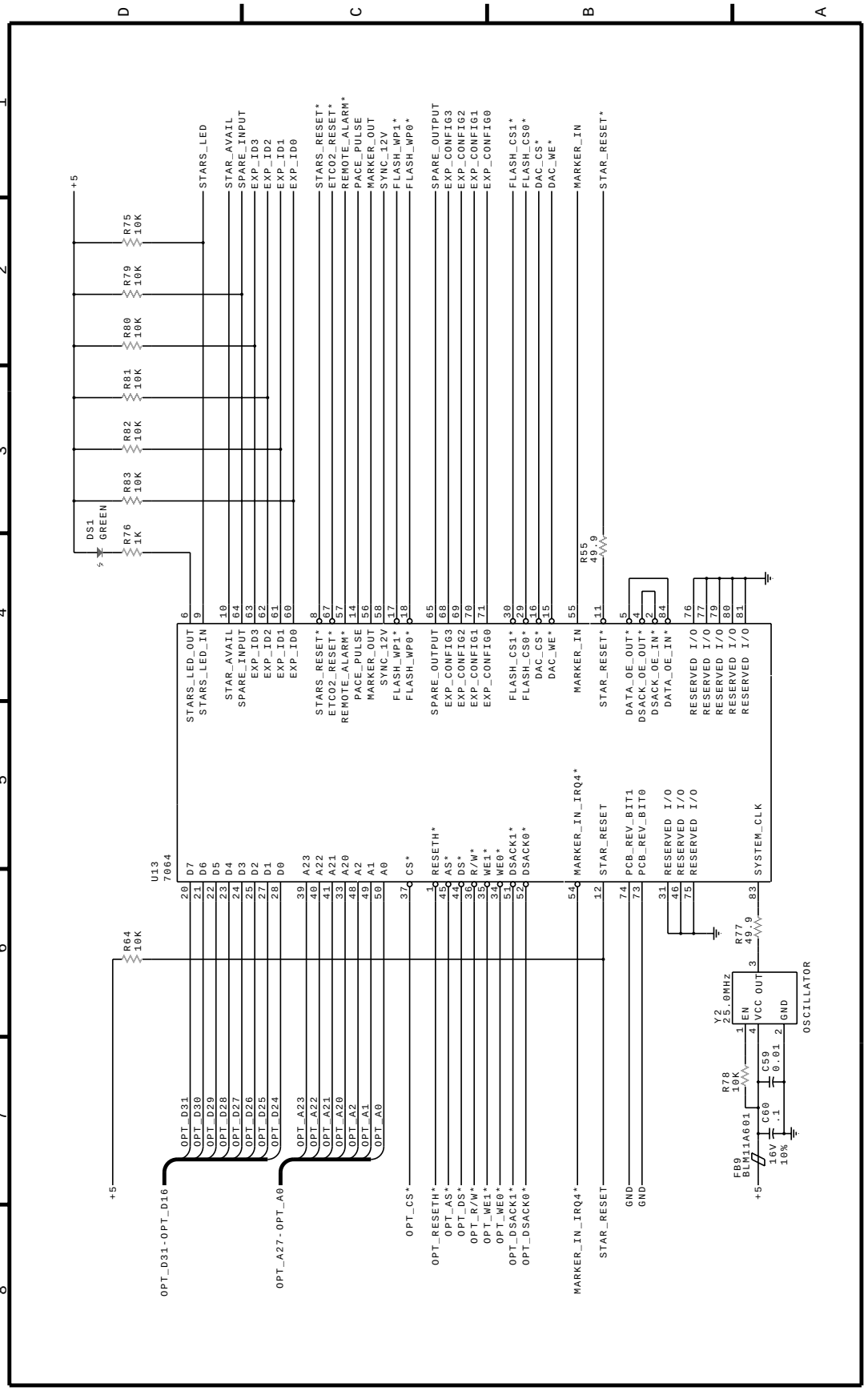
U13
7064
DS1
GREEN
R76
1K
R83
10K
R82
10K
R81
10K
R80
10K
R79
10K
R75
10K
R64
10K
R55
49.9
R77
49.9
R78
10K
C60
.1
C59
0.01
16V
10%
FB9
BLM11A601
Y2
25.0MHz
EN
VCC
OUT
GND
OSCILLATOR
+5
STARS_LED_OUT
STARS_LED_IN
STAR_AVAIL
SPARE_INPUT
EXP_ID3
EXP_ID2
EXP_ID1
EXP_ID0
STARS_RESET*
ETCO2_RESET*
REMOTE_ALARM*
PACE_PULSE
MARKER_OUT
SYNC_12V
FLASH_WP1*
FLASH_WP0*
SPARE_OUTPUT
EXP_CONFIG3
EXP_CONFIG2
EXP_CONFIG1
EXP_CONFIG0
FLASH_CS1*
FLASH_CS0*
DAC_CS*
DAC_WE*
MARKER_IN
STAR_RESET*
DATA_OE_OUT*
DSACK_OE_OUT*
DSACK_OE_IN*
DATA_OE_IN*
RESERVED I/O
RESERVED I/O
RESERVED I/O
RESERVED I/O
RESETH*
AS*
DS*
R/W*
WE1*
WE0*
DSACK1*
DSACK0*
A23
A22
A21
A20
A2
A1
A0
CS*
MARKER_IN_IRQ4*
STAR_RESET
PCB_REV_BIT1
PCB_REV_BIT0
SYSTEM_CLK
GND
OPT_D31-OPT_D16
OPT_A27-OPT_A0
OPT_RESETH*
OPT_AS*
OPT_DS*
OPT_R/W*
OPT_WE1*
OPT_WE0*
OPT_DSACK1*
OPT_DSACK0*
OPT_CS*
MARKER_IN_IRQ4*
STAR_RESET
GND
GND

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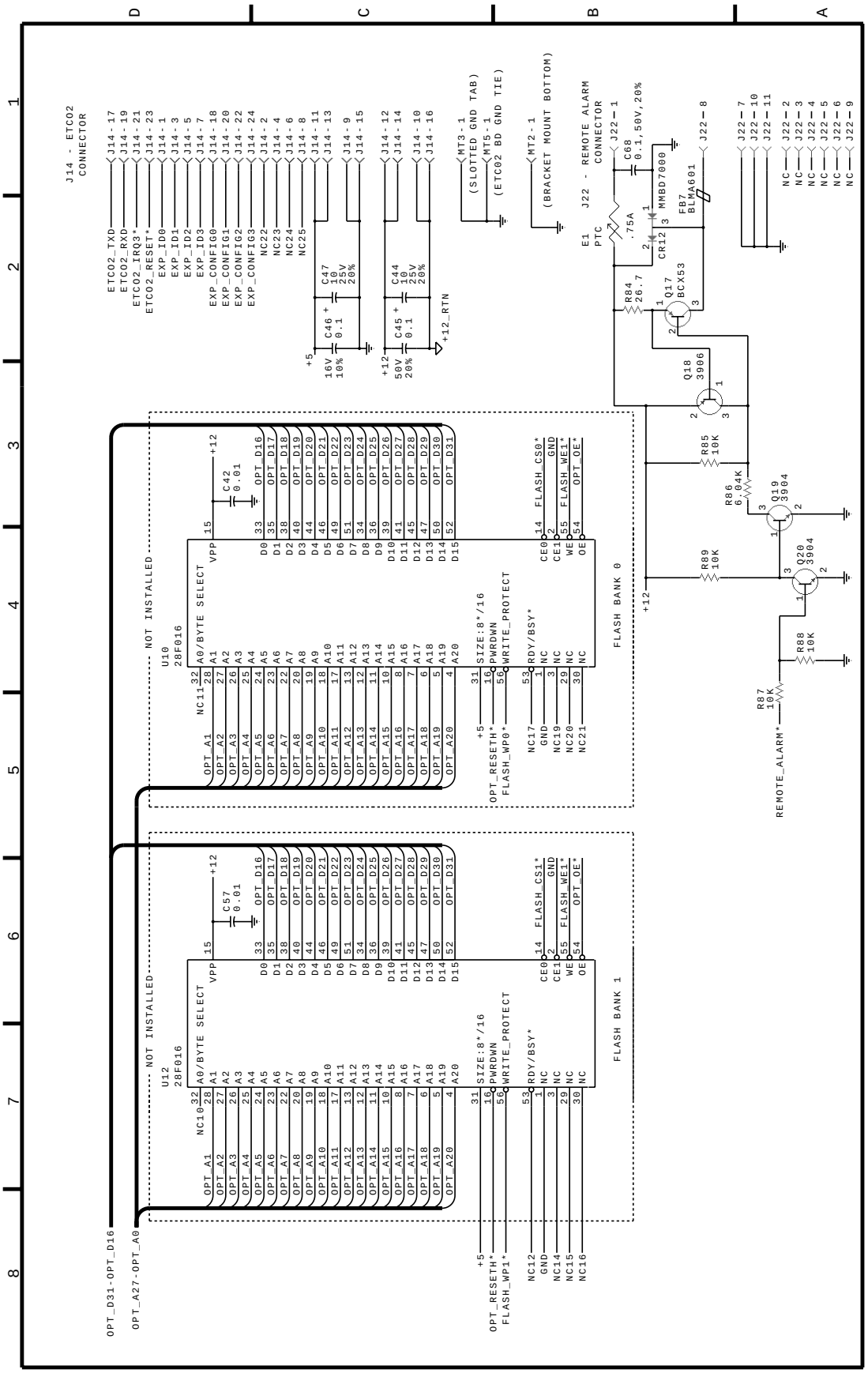
J14 - ETCO2 CONNECTOR
ETCO2_TXD
ETCO2_RXD
ETCO2_IRQ3*
ETCO2_RESET*
EXP_ID0
EXP_ID1
EXP_ID2
EXP_ID3
EXP_CONFIG0
EXP_CONFIG1
EXP_CONFIG2
EXP_CONFIG3
NC22
NC23
NC24
NC25
C47 10 25V 20%
C46 0.1 16V 10%
C44 10 25V 20%
C45 0.1 50V 20%
+12_RTN
MT3-1 (SLOTTED GND TAB)
MT5-1 (ETCO2 BD GND TIE)
MT2-1 (BRACKET MOUNT BOTTOM)
J22 - REMOTE ALARM CONNECTOR
E1 PTC .75A
C68 0.1,50V,20%
CR12 MMBD7000
FB7 BLMA601
R84 26.7
Q17 BCX53
Q18 3906
R85 10K
R86 6.04K
Q19 3904
R89 10K
Q20 3904
R88 10K
R87 10K
REMOTE_ALARM*
NOT INSTALLED
U10 28F016
U12 28F016
A0/BYTE SELECT
VPP
C42 0.01
C57 0.01
SIZE:8*/16
PWRDWN
WRITE_PROTECT
RDY/BSY*
FLASH_CS0*
FLASH_CS1*
FLASH_WE1*
OPT_OE*
FLASH BANK 0
FLASH BANK 1
OPT_D31-OPT_D16
OPT_A27-OPT_A0

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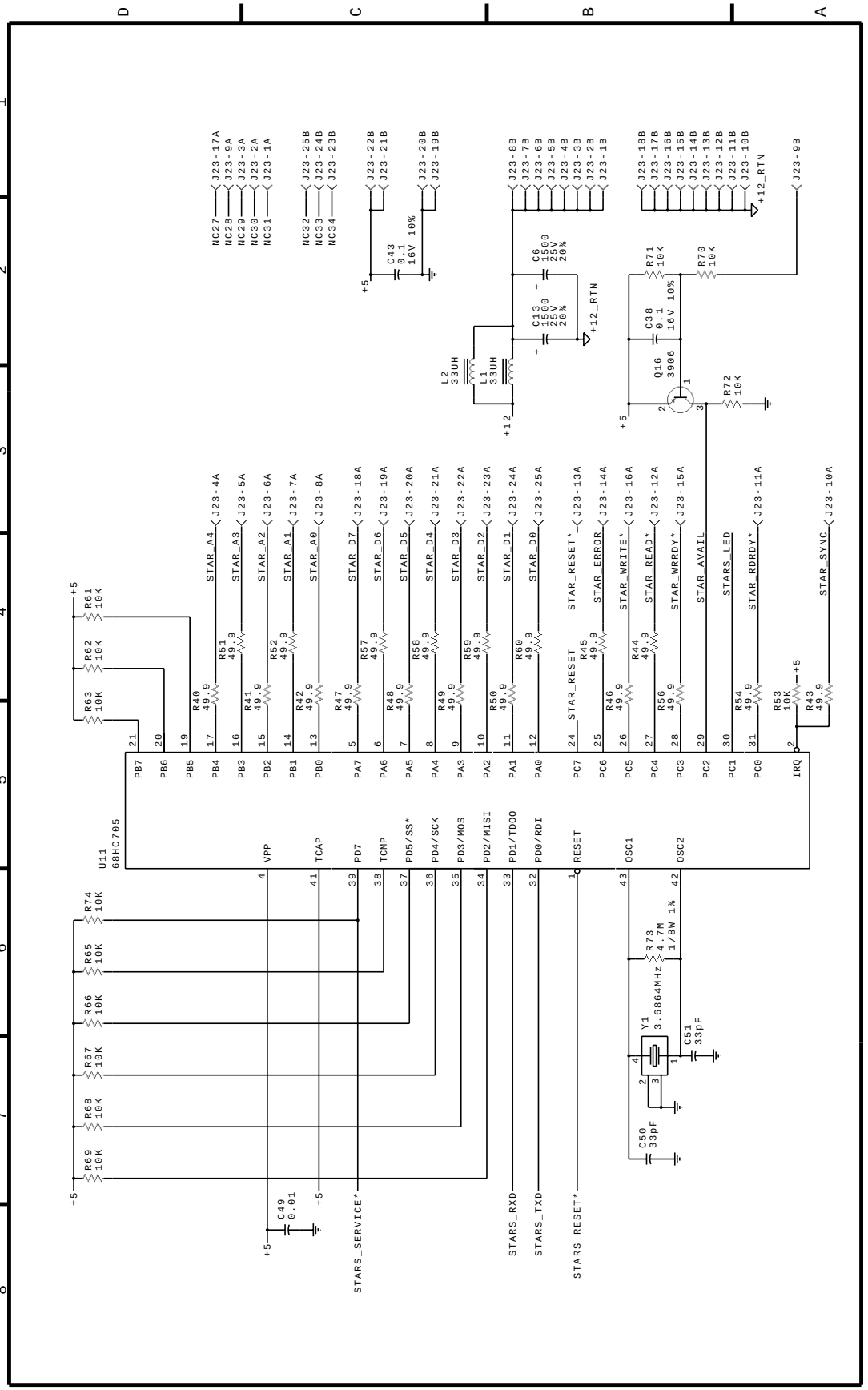
U11
68HC705
C49
0.01
C50
33pF
C51
33pF
Y1
3.6864MHz
R73
4.7M
1/8W 1%
L1
33UH
L2
33UH
C6
1500
25V
20%
C13
150
25V
20%
C43
0.1
16V 10%
C38
0.1
16V 10%
Q16
3906
+12_RTN
STAR_A4
STAR_A3
STAR_A2
STAR_A1
STAR_A0
STAR_D7
STAR_D6
STAR_D5
STAR_D4
STAR_D3
STAR_D2
STAR_D1
STAR_D0
STAR_RESET*
STAR_ERROR
STAR_WRITE*
STAR_READ*
STAR_WRRDY*
STAR_AVAIL
STARS_LED
STAR_RDRDY*
STAR_SYNC
STARS_SERVICE*
STARS_RXD
STARS_TXD
STARS_RESET*

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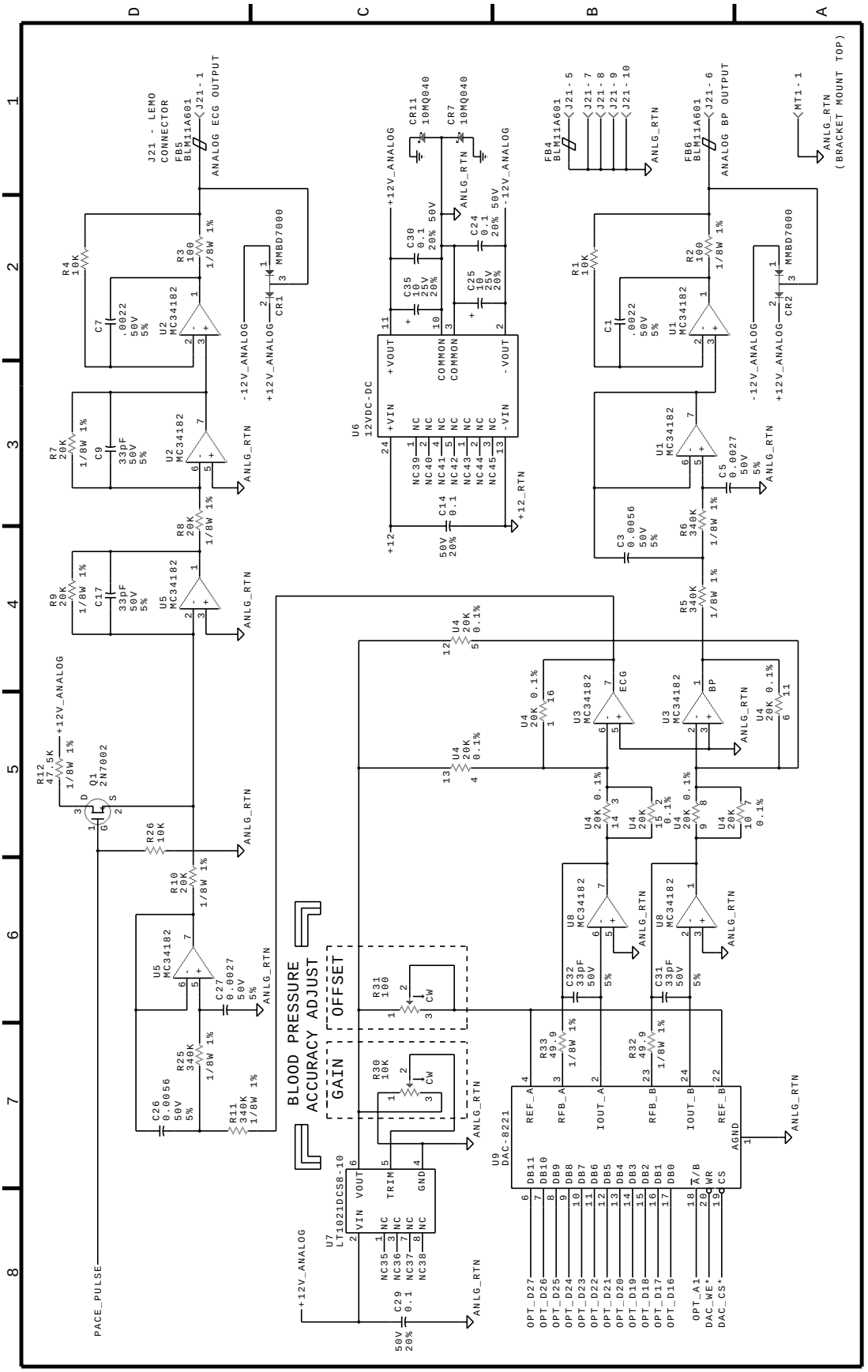
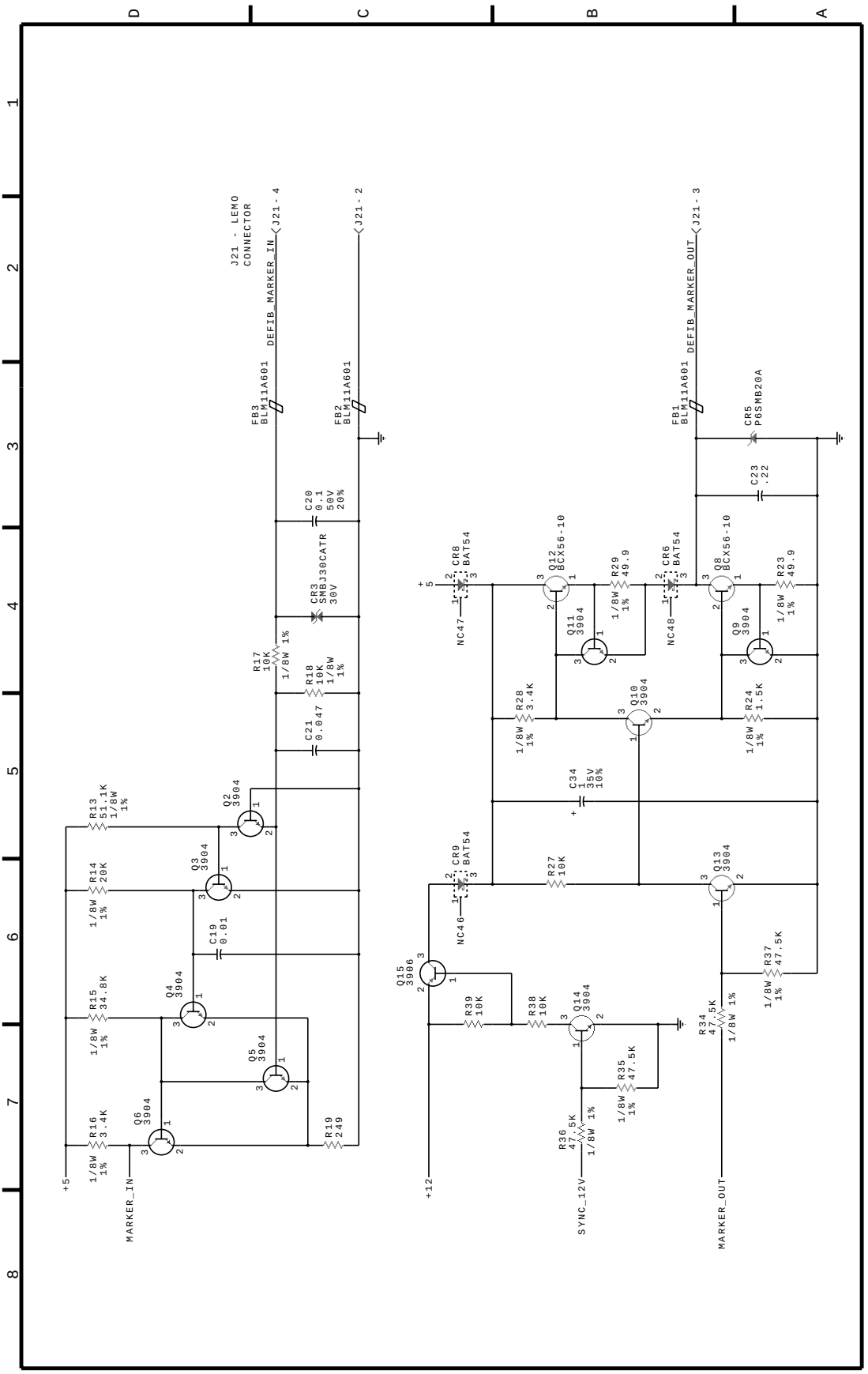

J21 - LEMO CONNECTOR
ANALOG ECG OUTPUT
ANALOG BP OUTPUT
(BRACKET MOUNT TOP)
BLOOD PRESSURE ACCURACY ADJUST
GAIN
OFFSET
PACE_PULSE
+12V_ANALOG
-12V_ANALOG
ANLG_RTN
+12_RTN
+12
12VDC-DC
MC34182
LT1021DCS8-10
DAC-8221
ECG
BP


J21 - LEMO CONNECTOR
DEFIB_MARKER_IN
DEFIB_MARKER_OUT
MARKER_IN
MARKER_OUT
SYNC_12V
+5
+12
FB3 BLM11A601
FB2 BLM11A601
FB1 BLM11A601
CR3 SMBJ30CATR 30V
CR5 P6SMB20A
CR8 BAT54
CR6 BAT54
CR9 BAT54
C20 0.1 50V 20%
C21 0.047
C19 0.01
C23 .22
C34 35V 10%
R17 10K 1/8W 1%
R18 10K 1/8W 1%
R13 51.1K 1/8W 1%
R14 20K 1/8W 1%
R15 34.8K 1/8W 1%
R16 3.4K 1/8W 1%
R19 249
R28 3.4K 1/8W 1%
R29 49.9 1/8W 1%
R23 49.9 1/8W 1%
R24 1.5K 1/8W 1%
R27 10K
R39 10K
R38 10K
R36 47.5K 1/8W 1%
R35 47.5K 1/8W 1%
R34 47.5K 1/8W 1%
R37 47.5K 1/8W 1%
Q2 3904
Q3 3904
Q4 3904
Q5 3904
Q6 3904
Q12 BCX56-10
Q11 3904
Q8 BCX56-10
Q9 3904
Q10 3904
Q13 3904
Q14 3904
Q15 3906
NC47
NC48
NC46

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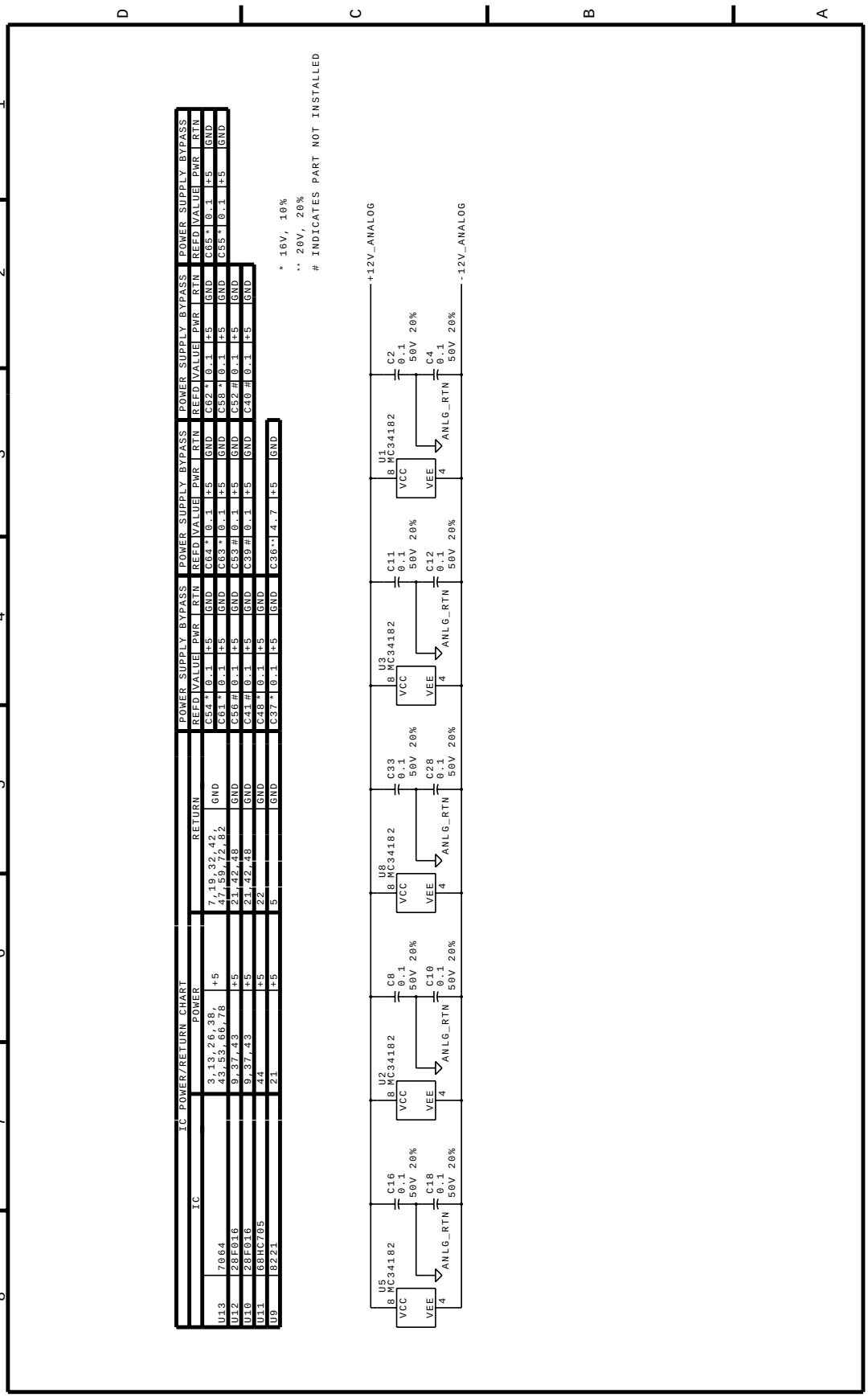
IC POWER/RETURN CHART
IC
POWER
RETURN
POWER SUPPLY BYPASS
REFD VALUE PWR RTN
POWER SUPPLY BYPASS
REFD VALUE PWR RTN
POWER SUPPLY BYPASS
REFD VALUE PWR RTN
U13 7064 3,13,26,38, 43,53,66,78 +5 7,19,32,42, 47,59,72,82 GND C54 * 0.1 +5 GND C64 * 0.1 +5 GND C62 * 0.1 +5 GND C65 * 0.1 +5 GND
C61 * 0.1 +5 GND C63 * 0.1 +5 GND C58 * 0.1 +5 GND C55 * 0.1 +5 GND
U12 28F016 9,37,43 +5 21,42,48 GND C56 # 0.1 +5 GND C53 # 0.1 +5 GND C52 # 0.1 +5 GND
U10 28F016 9,37,43 +5 21,42,48 GND C41 # 0.1 +5 GND C39 # 0.1 +5 GND C40 # 0.1 +5 GND
U11 68HC705 44 +5 22 GND C48 * 0.1 +5 GND
U9 8221 21 +5 5 GND C37 * 0.1 +5 GND C36 ** 4.7 +5 GND
* 16V, 10%
** 20V, 20%
# INDICATES PART NOT INSTALLED
+12V_ANALOG
-12V_ANALOG
U5 8 MC34182 VCC 4 VEE
U2 8 MC34182 VCC 4 VEE
U8 8 MC34182 VCC 4 VEE
U3 8 MC34182 VCC 4 VEE
U1 8 MC34182 VCC 4 VEE
C16 0.1 50V 20%
C18 0.1 50V 20%
C8 0.1 50V 20%
C10 0.1 50V 20%
C33 0.1 50V 20%
C28 0.1 50V 20%
C11 0.1 50V 20%
C12 0.1 50V 20%
C2 0.1 50V 20%
C4 0.1 50V 20%
ANLG_RTN
ANLG_RTN
ANLG_RTN
ANLG_RTN
ANLG_RTN

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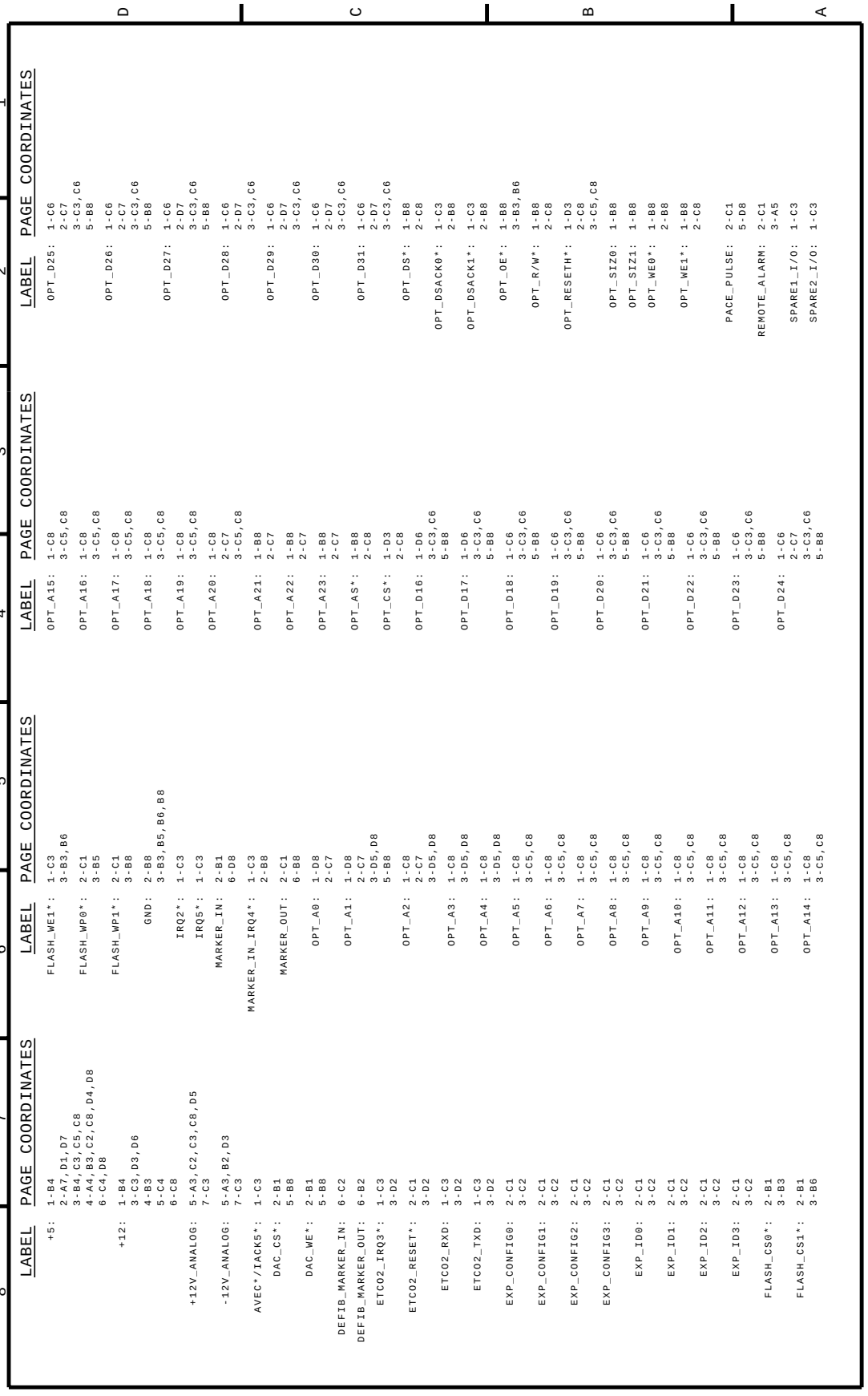
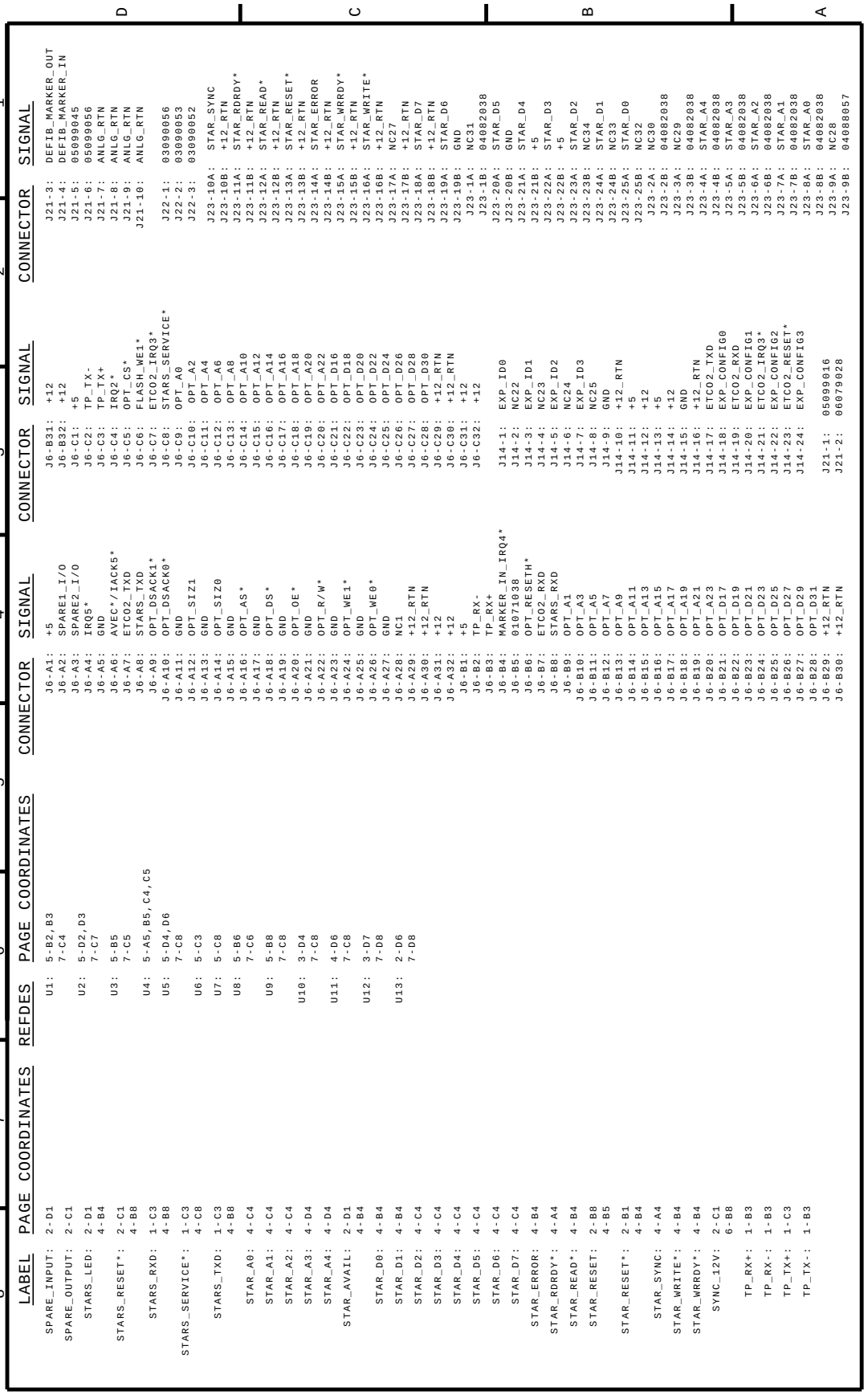


LABEL	PAGE COORDINATES
+5:	1-B4
	2-A7,D1,D7
	3-B4,C3,C5,C8
	4-A4,B3,C2,C8,D4,D8
	6-C4,D8
+12:	1-B4
	3-C3,D3,D6
	4-B3
	5-C4
	6-C8
+12V_ANALOG:	5-A3,C2,C3,C8,D5
	7-C3
-12V_ANALOG:	5-A3,B2,D3
	7-C3
AVEC*/IACK5*:	1-C3
DAC_CS*:	2-B1
	5-B8
DAC_WE*:	2-B1
	5-B8
DEFIB_MARKER_IN:	6-C2
DEFIB_MARKER_OUT:	6-B2
ETCO2_IRQ3*:	1-C3
	3-D2
ETCO2_RESET*:	2-C1
	3-D2
ETCO2_RXD:	1-C3
	3-D2
ETCO2_TXD:	1-C3
	3-D2
EXP_CONFIG0:	2-C1
	3-C2
EXP_CONFIG1:	2-C1
	3-C2
EXP_CONFIG2:	2-C1
	3-C2
EXP_CONFIG3:	2-C1
	3-C2
EXP_ID0:	2-C1
	3-C2
EXP_ID1:	2-C1
	3-C2
EXP_ID2:	2-C1
	3-C2
EXP_ID3:	2-C1
	3-C2
FLASH_CS0*:	2-B1
	3-B3
FLASH_CS1*:	2-B1
	3-B6

LABEL	PAGE COORDINATES
FLASH_WE1*:	1-C3
	3-B3,B6
FLASH_WP0*:	2-C1
	3-B5
FLASH_WP1*:	2-C1
	3-B8
GND:	2-B8
	3-B3,B5,B6,B8
IRQ2*:	1-C3
IRQ5*:	1-C3
MARKER_IN:	2-B1
	6-D8
MARKER_IN_IRQ4*:	1-C3
	2-B8
MARKER_OUT:	2-C1
	6-B8
OPT_A0:	1-D8
	2-C7
OPT_A1:	1-D8
	2-C7
	3-D5,D8
OPT_A2:	1-C8
	2-C7
	3-D5,D8
OPT_A3:	1-C8
	3-D5,D8
OPT_A4:	1-C8
	3-D5,D8
OPT_A5:	1-C8
	3-C5,C8
OPT_A6:	1-C8
	3-C5,C8
OPT_A7:	1-C8
	3-C5,C8
OPT_A8:	1-C8
	3-C5,C8
OPT_A9:	1-C8
	3-C5,C8
OPT_A10:	1-C8
	3-C5,C8
OPT_A11:	1-C8
	3-C5,C8
OPT_A12:	1-C8
	3-C5,C8
OPT_A13:	1-C8
	3-C5,C8
OPT_A14:	1-C8
	3-C5,C8

LABEL	PAGE COORDINATES
OPT_A15:	1-C8
	3-C5,C8
OPT_A16:	1-C8
	3-C5,C8
OPT_A17:	1-C8
	3-C5,C8
OPT_A18:	1-C8
	3-C5,C8
OPT_A19:	1-C8
	3-C5,C8
OPT_A20:	1-C8
	2-C7
	3-C5,C8
OPT_A21:	1-B8
	2-C7
OPT_A22:	1-B8
	2-C7
OPT_A23:	1-B8
	2-C7
OPT_AS*:	1-B8
	2-C8
OPT_CS*:	1-D3
	2-C8
OPT_D16:	1-D6
	3-C3,C6
	5-B8
OPT_D17:	1-D6
	3-C3,C6
	5-B8
OPT_D18:	1-C6
	3-C3,C6
	5-B8
OPT_D19:	1-C6
	3-C3,C6
	5-B8
OPT_D20:	1-C6
	3-C3,C6
	5-B8
OPT_D21:	1-C6
	3-C3,C6
	5-B8
OPT_D22:	1-C6
	3-C3,C6
	5-B8
OPT_D23:	1-C6
	3-C3,C6
	5-B8
OPT_D24:	1-C6
	2-C7
	3-C3,C6
	5-B8

LABEL	PAGE COORDINATES
OPT_D25:	1-C6
	2-C7
	3-C3,C6
	5-B8
OPT_D26:	1-C6
	2-C7
	3-C3,C6
	5-B8
OPT_D27:	1-C6
	2-D7
	3-C3,C6
	5-B8
OPT_D28:	1-C6
	2-D7
	3-C3,C6
OPT_D29:	1-C6
	2-D7
	3-C3,C6
OPT_D30:	1-C6
	2-D7
	3-C3,C6
OPT_D31:	1-C6
	2-D7
	3-C3,C6
OPT_DS*:	1-B8
	2-C8
OPT_DSACK0*:	1-C3
	2-B8
OPT_DSACK1*:	1-C3
	2-B8
OPT_OE*:	1-B8
	3-B3,B6
OPT_R/W*:	1-B8
	2-C8
OPT_RESETH*:	1-D3
	2-C8
	3-C5,C8
OPT_SIZ0:	1-B8
OPT_SIZ1:	1-B8
OPT_WE0*:	1-B8
	2-B8
OPT_WE1*:	1-B8
	2-C8
PACE_PULSE:	2-C1
	5-D8
REMOTE_ALARM:	2-C1
	3-A5
SPARE1_I/O:	1-C3
SPARE2_I/O:	1-C3



LABEL	PAGE COORDINATES	REFDES	PAGE COORDINATES	CONNECTOR	SIGNAL	CONNECTOR	SIGNAL	CONNECTOR	SIGNAL
SPARE_INPUT:	2-D1	U1:	5-B2,B3	J6-A1:	+5	J6-B31:	+12	J21-3:	DEFIB_MARKER_OUT
			7-C4	J6-A2:	SPARE1_I/O	J6-B32:	+12	J21-4:	DEFIB_MARKER_IN
SPARE_OUTPUT:	2-C1	U2:	5-D2,D3	J6-A3:	SPARE2_I/O	J6-C1:	+5	J21-5:	05099045
STARS_LED:	2-D1		7-C7	J6-A4:	IRQ5*	J6-C2:	TP_TX-	J21-6:	05099056
	4-B4			J6-A5:	GND	J6-C3:	TP_TX+	J21-7:	ANLG_RTN
		U3:	5-B5	J6-A6:	AVEC*/IACK5*	J6-C4:	IRQ2*	J21-8:	ANLG_RTN
STARS_RESET*:	2-C1		7-C5	J6-A7:	ETCO2_TXD	J6-C5:	OPT_CS*	J21-9:	ANLG_RTN
	4-B8			J6-A8:	STARS_TXD	J6-C6:	FLASH_WE1*	J21-10:	ANLG_RTN
		U4:	5-A5,B5,C4,C5	J6-A9:	OPT_DSACK1*	J6-C7:	ETCO2_IRQ3*		
STARS_RXD:	1-C3	U5:	5-D4,D6	J6-A10:	OPT_DSACK0*	J6-C8:	STARS_SERVICE*	J22-1:	03090056
	4-B8		7-C8	J6-A11:	GND	J6-C9:	OPT_A0	J22-2:	03090053
STARS_SERVICE*:	1-C3			J6-A12:	OPT_SIZ1	J6-C10:	OPT_A2	J22-3:	03090052
	4-C8	U6:	5-C3	J6-A13:	GND	J6-C11:	OPT_A4		
		U7:	5-C8	J6-A14:	OPT_SIZ0	J6-C12:	OPT_A6	J23-10A:	STAR_SYNC
STARS_TXD:	1-C3			J6-A15:	GND	J6-C13:	OPT_A8	J23-10B:	+12_RTN
	4-B8	U8:	5-B6	J6-A16:	OPT_AS*	J6-C14:	OPT_A10	J23-11A:	STAR_RDRDY*
			7-C6	J6-A17:	GND	J6-C15:	OPT_A12	J23-11B:	+12_RTN
STAR_A0:	4-C4			J6-A18:	OPT_DS*	J6-C16:	OPT_A14	J23-12A:	STAR_READ*
STAR_A1:	4-C4	U9:	5-B8	J6-A19:	GND	J6-C17:	OPT_A16	J23-12B:	+12_RTN
			7-C8	J6-A20:	OPT_OE*	J6-C18:	OPT_A18	J23-13A:	STAR_RESET*
STAR_A2:	4-C4			J6-A21:	GND	J6-C19:	OPT_A20	J23-13B:	+12_RTN
		U10:	3-D4	J6-A22:	OPT_R/W*	J6-C20:	OPT_A22	J23-14A:	STAR_ERROR
STAR_A3:	4-D4		7-C8	J6-A23:	GND	J6-C21:	OPT_D16	J23-14B:	+12_RTN
		U11:	4-D6	J6-A24:	OPT_WE1*	J6-C22:	OPT_D18	J23-15A:	STAR_WRRDY*
STAR_A4:	4-D4		7-C8	J6-A25:	GND	J6-C23:	OPT_D20	J23-15B:	+12_RTN
STAR_AVAIL:	2-D1			J6-A26:	OPT_WE0*	J6-C24:	OPT_D22	J23-16A:	STAR_WRITE*
	4-B4	U12:	3-D7	J6-A27:	GND	J6-C25:	OPT_D24	J23-16B:	+12_RTN
			7-D8	J6-A28:	NC1	J6-C26:	OPT_D26	J23-17A:	NC27
STAR_D0:	4-B4			J6-A29:	+12_RTN	J6-C27:	OPT_D28	J23-17B:	+12_RTN
STAR_D1:	4-B4	U13:	2-D6	J6-A30:	+12_RTN	J6-C28:	OPT_D30	J23-18A:	STAR_D7
			7-D8	J6-A31:	+12	J6-C29:	+12_RTN	J23-18B:	+12_RTN
STAR_D2:	4-C4			J6-A32:	+12	J6-C30:	+12_RTN	J23-19A:	STAR_D6
STAR_D3:	4-C4			J6-B1:	+5	J6-C31:	+12	J23-19B:	GND
STAR_D4:	4-C4			J6-B2:	TP_RX-	J6-C32:	+12	J23-1A:	NC31
STAR_D5:	4-C4			J6-B3:	TP_RX+			J23-1B:	04082038
STAR_D6:	4-C4			J6-B4:	MARKER_IN_IRQ4*	J14-1:	EXP_ID0	J23-20A:	STAR_D5
STAR_D7:	4-C4			J6-B5:	01071038	J14-2:	NC22	J23-20B:	GND
STAR_ERROR:	4-B4			J6-B6:	OPT_RESETH*	J14-3:	EXP_ID1	J23-21A:	STAR_D4
STAR_RDRDY*:	4-A4			J6-B7:	ETCO2_RXD	J14-4:	NC23	J23-21B:	+5
				J6-B8:	STARS_RXD	J14-5:	EXP_ID2	J23-22A:	STAR_D3
STAR_READ*:	4-B4			J6-B9:	OPT_A1	J14-6:	NC24	J23-22B:	+5
				J6-B10:	OPT_A3	J14-7:	EXP_ID3	J23-23A:	STAR_D2
STAR_RESET:	2-B8			J6-B11:	OPT_A5	J14-8:	NC25	J23-23B:	NC34
	4-B5			J6-B12:	OPT_A7	J14-9:	GND	J23-24A:	STAR_D1
				J6-B13:	OPT_A9	J14-10:	+12_RTN	J23-24B:	NC33
STAR_RESET*:	2-B1			J6-B14:	OPT_A11	J14-11:	+5	J23-25A:	STAR_D0
	4-B4			J6-B15:	OPT_A13	J14-12:	+12	J23-25B:	NC32
				J6-B16:	OPT_A15	J14-13:	+5	J23-2A:	NC30
STAR_SYNC:	4-A4			J6-B17:	OPT_A17	J14-14:	+12	J23-2B:	04082038
				J6-B18:	OPT_A19	J14-15:	GND	J23-3A:	NC29
STAR_WRITE*:	4-B4			J6-B19:	OPT_A21	J14-16:	+12_RTN	J23-3B:	04082038
STAR_WRRDY*:	4-B4			J6-B20:	OPT_A23	J14-17:	ETCO2_TXD	J23-4A:	STAR_A4
SYNC_12V:	2-C1			J6-B21:	OPT_D17	J14-18:	EXP_CONFIG0	J23-4B:	04082038
	6-B8			J6-B22:	OPT_D19	J14-19:	ETCO2_RXD	J23-5A:	STAR_A3
				J6-B23:	OPT_D21	J14-20:	EXP_CONFIG1	J23-5B:	04082038
TP_RX+:	1-B3			J6-B24:	OPT_D23	J14-21:	ETCO2_IRQ3*	J23-6A:	STAR_A2
				J6-B25:	OPT_D25	J14-22:	EXP_CONFIG2	J23-6B:	04082038
TP_RX-:	1-B3			J6-B26:	OPT_D27	J14-23:	ETCO2_RESET*	J23-7A:	STAR_A1
TP_TX+:	1-C3			J6-B27:	OPT_D29	J14-24:	EXP_CONFIG3	J23-7B:	04082038
TP_TX-:	1-B3			J6-B28:	OPT_D31			J23-8A:	STAR_A0
				J6-B29:	+12_RTN	J21-1:	05099016	J23-8B:	04082038
				J6-B30:	+12_RTN	J21-2:	06079028	J23-9A:	NC28
								J23-9B:	04088057

Switches and Controls PN 800862-001E

Listed below are all switches, controls, and LEDs found on the circuit board, pn 800862-001E.

To calibrate barametric reference pressure, refer to the "Calibration" chapter in the *Eagle 3000 Patient Monitor Field Service Manual,* pn 415397-003.

Table 4-13. Switch SW1

Position	Normal Position	Function
1	Open	Jumper only when using Novametrix MHOST software
2	Open	Spare
3	Open	Spare
4	Open	Spare
5	Open	Flash is selected Jumper only when using EST emulator
6	Open	Spare
7	Open	Spare
8	Open	Spare

Table 4-14. LEDS

LED	Normal Condition	Function
D9/Red	Flashing at 1-Hz rate	PCB is functional (IAMOK)

PCB Connectors PN 800862-001E

Pin-by-pin descriptions and the signal names for each internal PCB connector are described below.

Table 4-15. Connector J3 (20-Pin Connector to Capnostat Sensor)

Pin	Name	Input/ Output	Description
1	SOURCE+	O	+12V power
2	SOURCE–	I	–12V power
3	INNER SHIELD	O	Ground reference
4	SPAN_SW	O	TTL
5	EECS		TTL
6	EED_IN	I	TTL
7	ZEWO_SW		TTL
8	+11V		+11V power
9	REF_IN		0-0.5V analog
10	AGND		Analog ground reference
11	+5V		+5V power
12	CASE_THERM		0-1V analog
13	–11V		–11V power
14	DET_THERM		0-1V analog
15	CASE_HTR		0-1V analog
16	DET_HTR		Ground reference
17	DET_RTN		Ground reference
18	EED_OUT	O	TTL
19	EESK		TTL
20	DATA_IN	I	0-0.5V analog

Table 4-16. Connector J14 (24-Pin Connector to Processor PCB)

Pin	Name	Input/ Output	Description
1	EXP_ID0	O	TTL - Circuit board ID =1
2	NC		
3	EXP_ID1	O	TTL
4	NC		
5	EXP_ID3	O	TTL
6	NC		
7	EXP_ID4	O	TTL
8	NC		
9	+5_RETURN	O	Ground reference
10	+12_RETURN	O	Ground reference
11	+5V	I	Power
12	+12V	I	Power
13	+5V	I	Power
14	+12V	I	Power
15	+5_RETURN	O	Ground reference
16	+12_RETURN	O	Ground reference
17	SCI_RXD	I	TTL -SCI receive signal
18	NC		
19	SCI_TXD	O	TTL -SCI transmit signal
20	NC		
21	MS_IRQ*	O	TTL -Main system (host) interrupt
22	NC		
23	H_RST*	I	TTL - Host reset
24	NC		

Table 4-17. Pump Connector (2-Pin Connector to Pump)

Pin	Name	Input/ Output	Description
1	VPUMP	O	Variable 2-10V
2	GND	I	Ground reference

Parts Location Diagram PN 800862-001E

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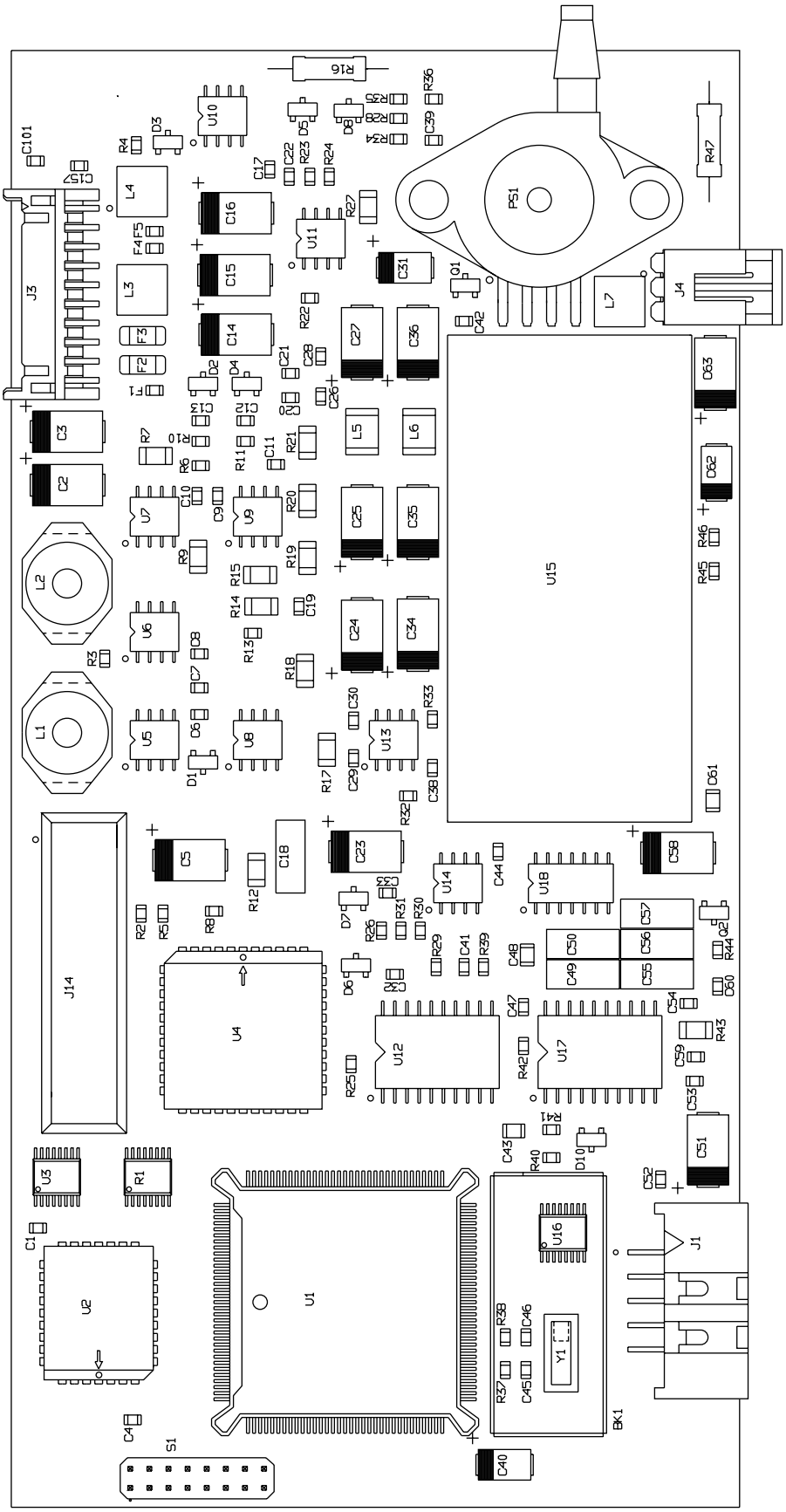

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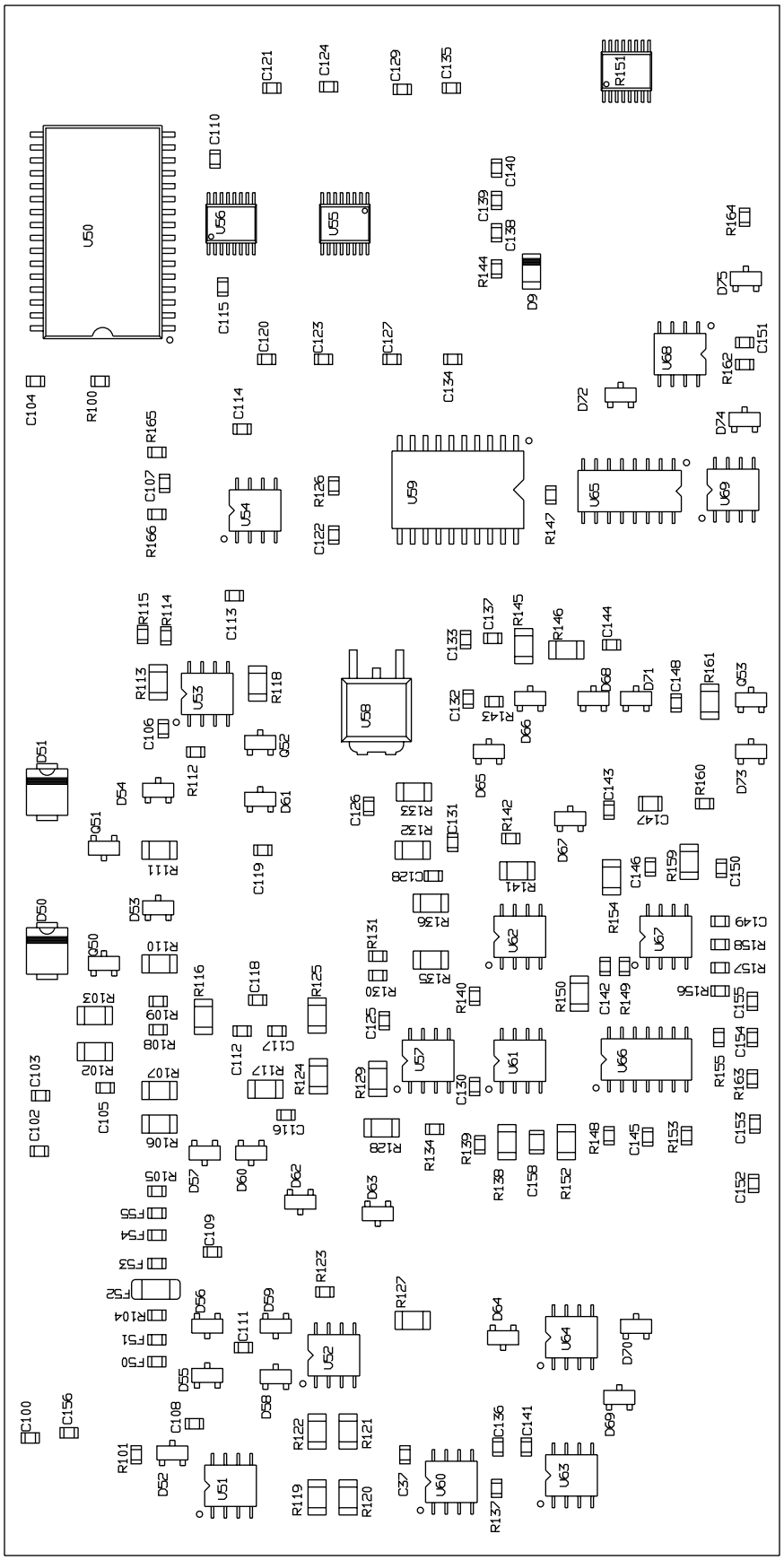
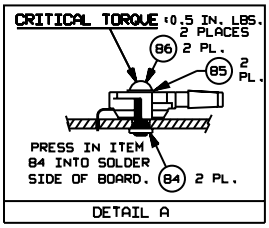
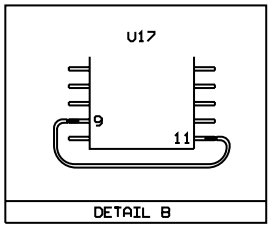

U50
U56
U55
C121
C124
C129
C135
R151
C110
C140
C139
C138
R144
D9
R164
D75
C115
C120
C123
C127
C134
R162
C151
U68
C104
R100
R165
C114
D72
D74
C107
R166
U54
R126
C122
U59
R147
U65
U69
C113
R115
R114
C133
C137
R145
R146
C144
R113
U53
R118
C132
R142
D66
D68
D71
C148
R161
D53
C106
Q52
D65
D73
D51
D54
R112
D61
C126
R134
R132
C131
R142
C143
C147
R160
Q51
R111
C119
C128
R141
D67
C146
R159
C150
D50
D53
R110
R136
U62
R154
U67
C149
Q50
R131
C118
R116
R125
R135
R133
R140
R150
C142
R149
R156
R157
R103
R109
R108
C125
C155
C103
C112
C117
R102
R107
U57
U61
U66
C154
R155
C102
C105
R106
R124
R129
C130
R163
C153
C116
R128
R134
R139
R148
C145
R153
R105
D57
D60
D62
D63
R138
C158
R152
C152
F55
F54
C109
F53
R123
R127
F52
R104
D56
D59
D64
U64
D70
F51
C111
U52
F50
D55
D58
D69
C100
C156
C108
R122
R121
C136
C141
R101
D52
U51
R119
R120
C37
U60
R137
U63



DETAIL A



DETAIL B

NOTES:

1. UNLESS OTHERWISE SPECIFIED, ALL RESISTANCE VALUES ARE IN OHMS, ALL CAPACITANCE VALUES ARE IN MICROFARADS.
2. THE BAR SHOWN ON ALL POLARIZED CAPACITORS DENOTES POSITIVE TERMINAL.
3. PS1 IS TO BE INSTALLED AFTER WAVE SOLDERING. HOLES MAY NOT FILL WITH SOLDER. PLUG BEFORE WAVE SOLDERING.
4. LEADS OF V15 AND BK1 DO NOT REQUIRE TRIMMING.
5. LIFT PIN 9 AT U17 FROM PCB PAD. JUMPER PIN 9 TO PIN 11 AT U17. PLACE A DOT OF RTV ITEM 99 BETWEEN PCB PAD AND LEAD TO MAINTAIN ISOLATION AND RIGIDIZE CONNECTION.

Parts List PN 800862-001E

Reference Designation	Description	Part Number	Qty
BK1	Shield, Crystal	411267-002	1
C1, 4, 6-11, 17, 19, 20, 22, 26, 30, 32, 33, 37-39, 41, 42, 47, 52-54, 59, 60, 102-107, 109, 110, 113-115, 117-125, 127, 129, 130, 132, 134-146, 148-155	Cap, Cer, 0.1µF, 5%, 16V	411575-002	72
C2, 3, 5	Cap, Tant, 100µF, 20%, 16V	1174-107	3
C12, 13, 21, 28, 100, 101, 108, 111, 112, 116	Cap, Cer, 0.1µF, 5%, 50V, SM	411575-012	10
C14, 23, 51	Cap, Tant, 22µF, 20%, 16V, SM	1174-226	3
C15, 16, 63	Cap, Tant, 22µF, 10%, 25V, SM	407653-001	3
C18, 49, 50, 55, 56, 57	Cap, MPE, 0.1µF, 10%, 50V	1102-104	6
C24, 25, 27, 34, 35, 36, 58	Cap, Tant, 68µF, 20%, 20V, SM	412662-004	7
C29, 44, 128, 133	Cap, Cer, 1000pF, 5%, 50V, SM	411575-003	4
C31, 62	Cap, Tant, 4.7µF, 20%, 20V, SM	402004-001	2
C40	Cap, Tant, 10µF, 20%, 16V, SM	1176-106	1
C43, 48, 61, 147	Cap, Cer, 270pF, 5%, 50V, SM	1181-271	4
C45, 46	Cap, NPO, 22pF, 5%, 50V, SM	411576-002	2
C126, 131	Cap, Cer, 4700pF, 5%, 50V, SM	411575-015	2
C156, 157	Cap, Cer, 150pF, 5%, 50V, SM	411575-005	2
C158	Cap, Cer, 0.01µF, 5%, 50V, SM	1182-103	1
D1, 5, 7, 8, 53, 54, 61, 64, 69, 70, 75	Diode, Schottky, SM BAT54	401985-001	11
D2, 4, 55-60, 62, 63, 65-68, 71-74	Diode Pair, Series, SM D7000	2013-201	18
D3, 6, 10, 52	Diode Array, Schottky, 30V, 200mA, SM BAT54	404928-001	4
D9	Light-Emitting Diode, Red, SM 1206	414417-002	1
F1, 4, 5, 50, 51, 53-55	Ferrite Bead BLM11A20	414061-001	8
F2, 3, 52	Ferrite Bead, SM	403800-002	3
J1	Connector, 10-Pin, Right-Angle	408937-002	1
J3	Connector, Header, 20-Pin	412595-001	1
J4	Connector, PC Header, 2-Pin	17043-002	1
J14	Connector, Header, Vertical, 24-Pin	415002-001	1
L1, 2	Inductor, 680µH, 1.150Ω, 0.3A, SM	411980-002	2
L3, 4, 7	Coil, Choke, 1000Ω, 1.5A, SM	415233-001	3
L5, 6	Inductor, 100µF, 10%, 150mA, SM	412112-004	2
PS1	Sensor, Pressure, 0–30 PSI, Absolute	409828-001	1

Reference Designation	Description	Part Number	Qty
Q1, 2, 50-53	Transistor, MOS-FET, N-Channel, SM 2N7002	402414-001	6
R2, 5, 104, 105	Res, Cer, 1K, 1%, 1/16W, SM	410334-008	4
R3, 6, 13, 26, 30, 31, 126, 156, 158, 162	Res, Cer, 100Ω, 1%, 1/16W, SM	410334-003	10
R4, 22-25, 29, 32, 33, 35, 36, 39, 45, 46, 100, 101, 108, 112, 114, 115, 123, 147-149, 155, 157, 160, 163-166	Res, Cer, 10K, 1%, 1/16W, SM	410334-013	30
R7, 14, 21, 121, 122, 150, 159	Res, Cer, 248K, 0.1%, 1/8W, SM	1067-249	7
R8, 28, 109, 134, 137, 140	Res, Cer, 100K, 1%, 1/16W, SM	410334-019	6
R9, 107	Res, Cer, 51.1K, 10%, 1/4W, SM	1082-772	2
R10, 11, 139, 142, 144	Res, Cer, 4.32K, 1%, 1/16W, SM	410334-081	5
R12, 17, 18, 19, 20, 124, 125, 127, 135, 136, 145, 146, 154	Res, Cer, 61.9K, 1%, 1/8W	1082-773	13
R15, 103, 106, 113, 117	Res, Chip, 27.4K, 1%, 1/8W	1082-892	5
R16, 47	Res, MF, 1Ω, 1%, 1/2W	409666-001	1
R27, 43, 110, 111, 161	Res, Chip, 1M, 0.1%, 1/8W, SM	1067-845	1
R34, 40-44, 143	Res, Cer, 511 Ω, 1%, 1/16W, SM	410334-034	6
R37	Res, Cer, 332K, 1%, 1/16W, SM	410334-115	1
R38	Res, Cer, 10M, 5%, 1/16W, SM	411723-003	1
R102, 118	Res, Chip, 2.2M, 1%, 1/8W, SM	1082-961	2
R116	Res, Cer, 47.5K, 1%, 1/8W, SM	1082-752	1
R119, 120, 129	Res, Cer, 422K, 1%, 1/8W, SM	1082-824	3
R128	Res, Cer, 133K, 1%, 1/8W, SM	1082-796	1
R130, 131	Res, Cer, 200K, 1%, 1/16W, SM	410334-022	2
R132, 133	Res, Cer, 24.9K, 1%, 1/8W, SM	1082-880	2
R138, 141	Res, Cer, 8.45K, 1%, 1/8W, SM	1082-812	2
R151, U3, U16, U55	Res, Ntwk, 10K, 16-Pin	1049-103	4
R152	Res, Chip, 1.21K, 1%, 1/8W	1082-862	1
R153	Res, Cer, 150Ω, 1%, 1/16W, SM	410334-028	1
S1	Connector, PC Header, Vertical, 2 x 8	414388-001	1
U1	Microcontroller, 16-MHz, SM 68332	408794-001	1
U2	Flash Memory, ETCO2	417934-001	1
U4	EPLD, Programmed, System Decoder, PLCC	415229-001	1
U5, 6	Transistor, MOS-FET, Dual, P-Channel, Enhancement Mode, SM SI9947	414472-001	1
U7, 53	Volt Comparator, Quad, SM TLC393	402996-001	2
U8	Transistor, MOS-FET Driver, Inverting, 1.2A, Dual, SM	414252-001	1

Reference Designation	Description	Part Number	Qty
U9, 13, 14, 57, 60	Operational Ampl, Dual, SM TLE2022	413132-001	5
U10	Transistor, MOS-FET, N-Channel, SM SI9955DY-T1	407547-001	1
U11	Transistor, MOS-FET Driver, Inverting, Dual, 1.5A, SM	414251-001	1
U12	Buffer/Line Driver, Three-State Output, Octal, SM AC244	402660-001	1
U15	Converter, DC-to-DC, ±12V, 8W	414322-001	1
U17	ADC, 12-Bit, 11-Channel, SM TLC2543	414394-001	1
U18, 66	Operation Ampl, Quad, SM LMC660C	405621-001	2
U50	RAM, Static, 128K x 8-Bit, 70nS, SM 628128	406255-002	1
U50, 51	Diode, Rectifier, 40A, 20V 120T3	407512-001	2
U51	Transistor, MOS-FET, Dual, P-Channel, Enhancement Mode, SM SI9948	411923-001	1
U52	Transistor, MOS-FET Driver, Non-Inverting, 1.5A, Dual, SM	414251-002	1
U54	Power Supply Monitor, w/Reset, SM MAX700CSA	406510-001	1
U56	Res, Ntwk, 33K, 16-Pin	1048-330	1
U58	Volt Rgltr, Pos 5V, 700mA, SM 78M05	412613-001	1
U59	DAC, 8-Bit, Dual, SM AD7528KR	410293-001	1
U61	Volt Rgltr, Low Drop, SM LT1129	415851-001	1
U62	Volt Rgltr, Low Drop, SM LT1175	415850-001	1
U63	Potentiometer, 10K, DIP. SM X9312W	414254-001	1
U64	Volt Rgltr, Adj, SM LP2951A	3076-001	1
U65	Operational Amplifier, Quad, SM SMP-04	414293-001	1
U67	Operational Ampl, Dual, SM TLC2272	412809-001	1
U68	EEPROM, Serial, 64 x 16-Bit, SM 93C46	406286-001	1
U69	Voltage Reference, 5.000V AD586L	404694-002	1
Y1	Crystal, 31.2kHz, SM	408946-001	1
–	Insert, Threaded, 4-40 (item 84 for PS1)	404158-001	2
–	Washer, Flat, SST, No 4 (item 85 for PS1)	4520-004	2
–	Screw, BDGH, 4-4 x 1/2, Coated (item 86 for PS1)	406124-004	2
–	Wire, 30 AWG (Black) (for jumper between pins 9 and 11 on U17)	4892-010	AR
–	Adhesive, RTV-738 (for wire between pins 9 and 11 on U17)	4851-054	AR
–	Circuit Board	800863-001	1
–	Schematic Diagram	SD800862-001	1

Schematic Diagram SD800862-001E

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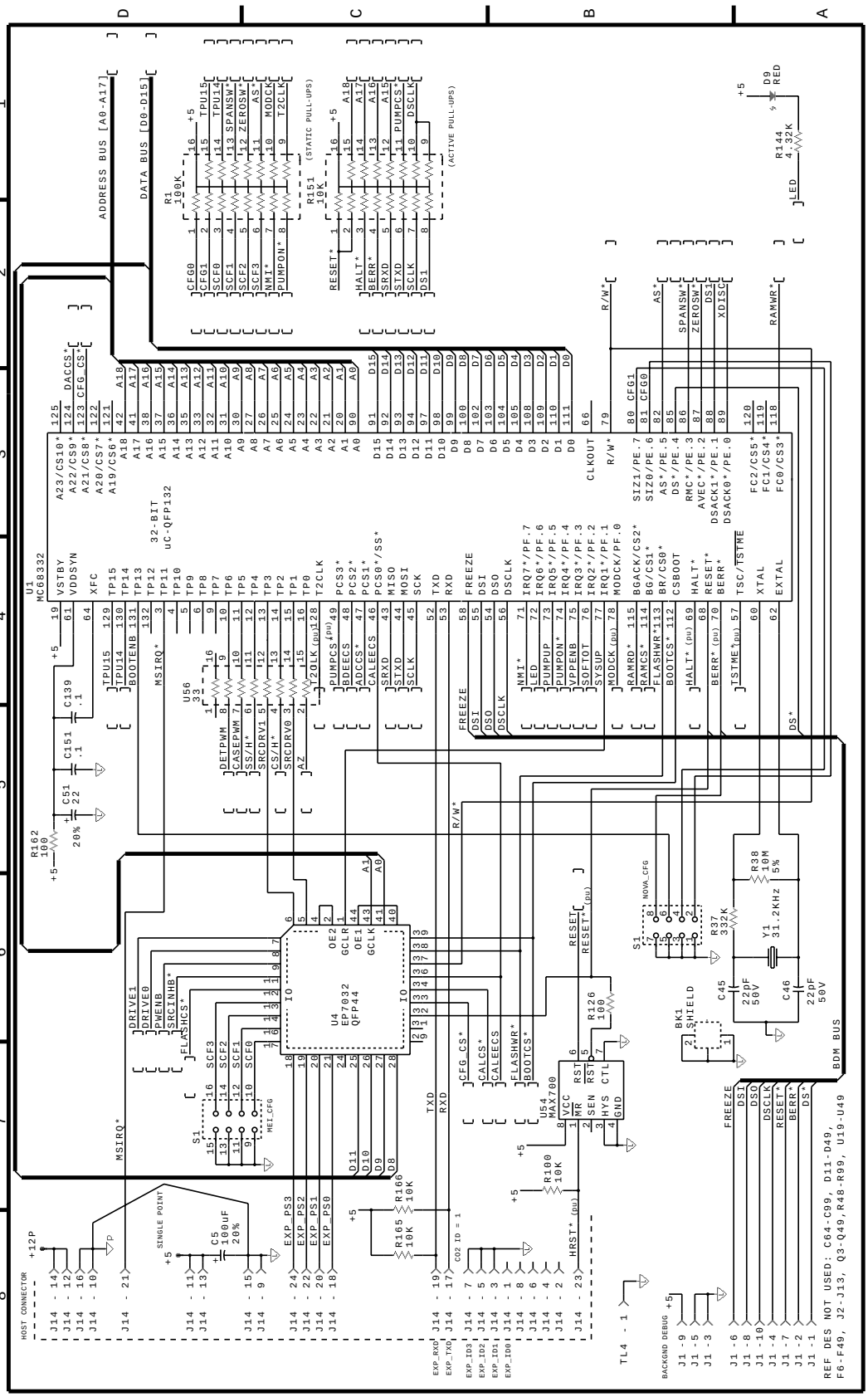

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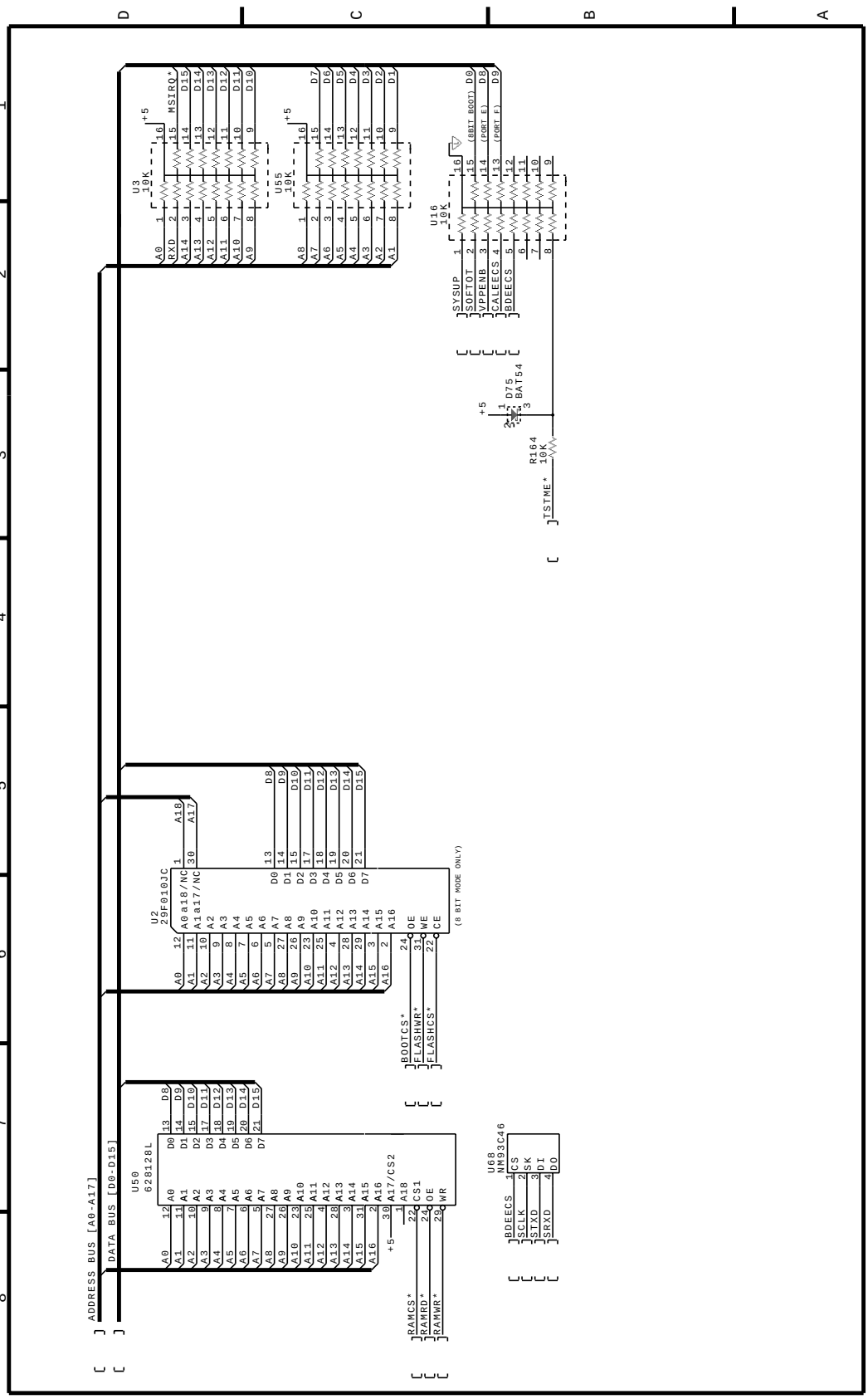
D
C
B
A
1
2
3
4
5
6
7
8
ADDRESS BUS [A0-A17]
DATA BUS [D0-D15]
U3
10K
MSIRQ*
U55
10K
U16
10K
SYSUP
SOFTOT
VPPENB
CALEECS
BDEECS
(8BIT BOOT)
(PORT E)
(PORT F)
D75
BAT54
R164
10K
TSTME*
U2
29F010JC
A0a18/NC
A1a17/NC
(8 BIT MODE ONLY)
BOOTCS*
FLASHWR*
FLASHCS*
U50
62812BL
RAMCS*
RAMRD*
RAMWR*
U68
NM93C46
BDEECS
SCLK
STXD
SRXD

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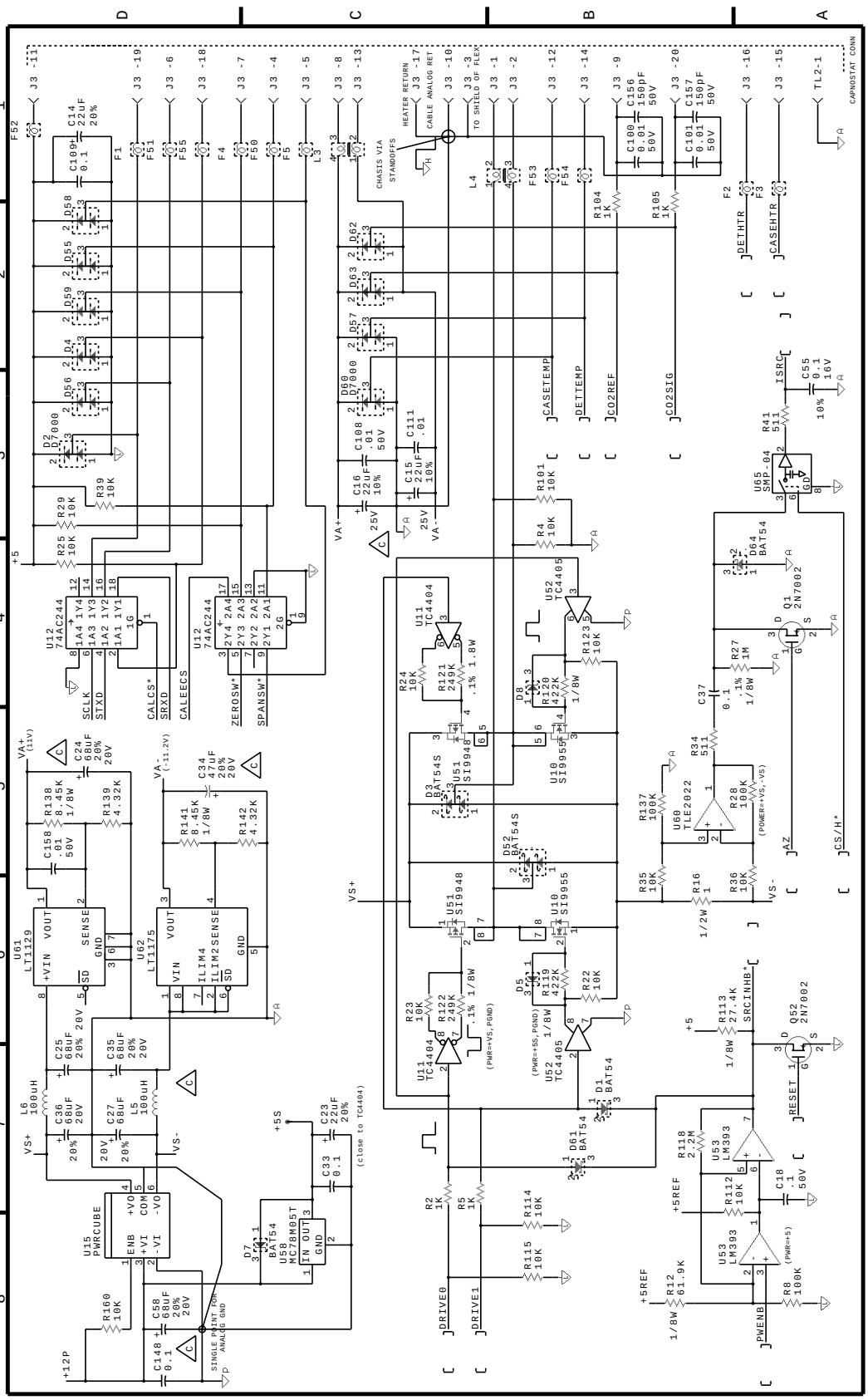

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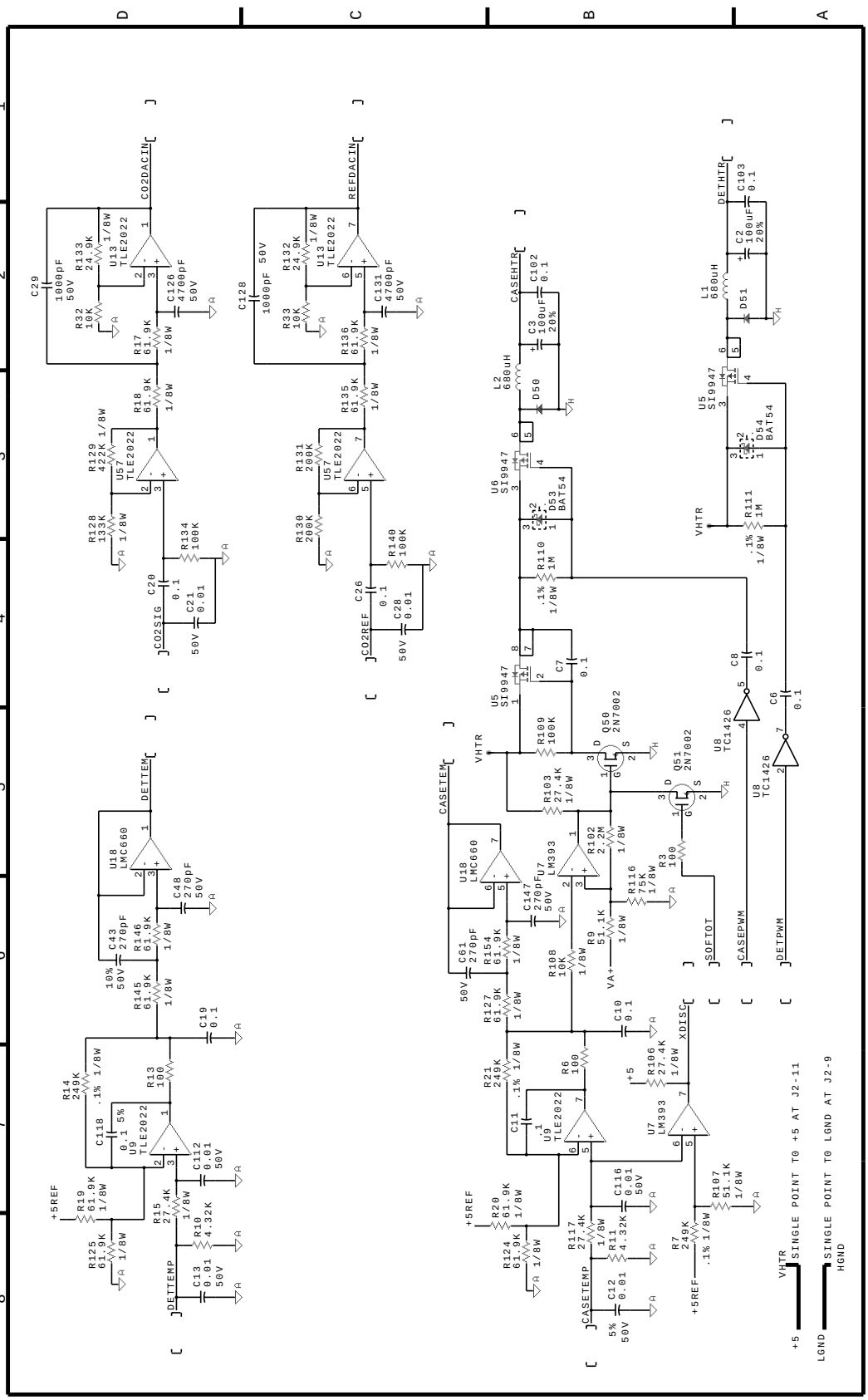
D
C
B
A
1
2
3
4
5
6
7
8
CO2DACIN
REFDACIN
DETTEMP
CASETEMP
CO2STG
CO2REF
DETTEM
CASETEM
VHTR
DETHTR
CASEHTR
SOFTOT
CASEPWM
DETPWM
XDISC
+5REF
+5
LGND
VHTR
SINGLE POINT T0 +5 AT J2-11
SINGLE POINT T0 LGND AT J2-9
HGND

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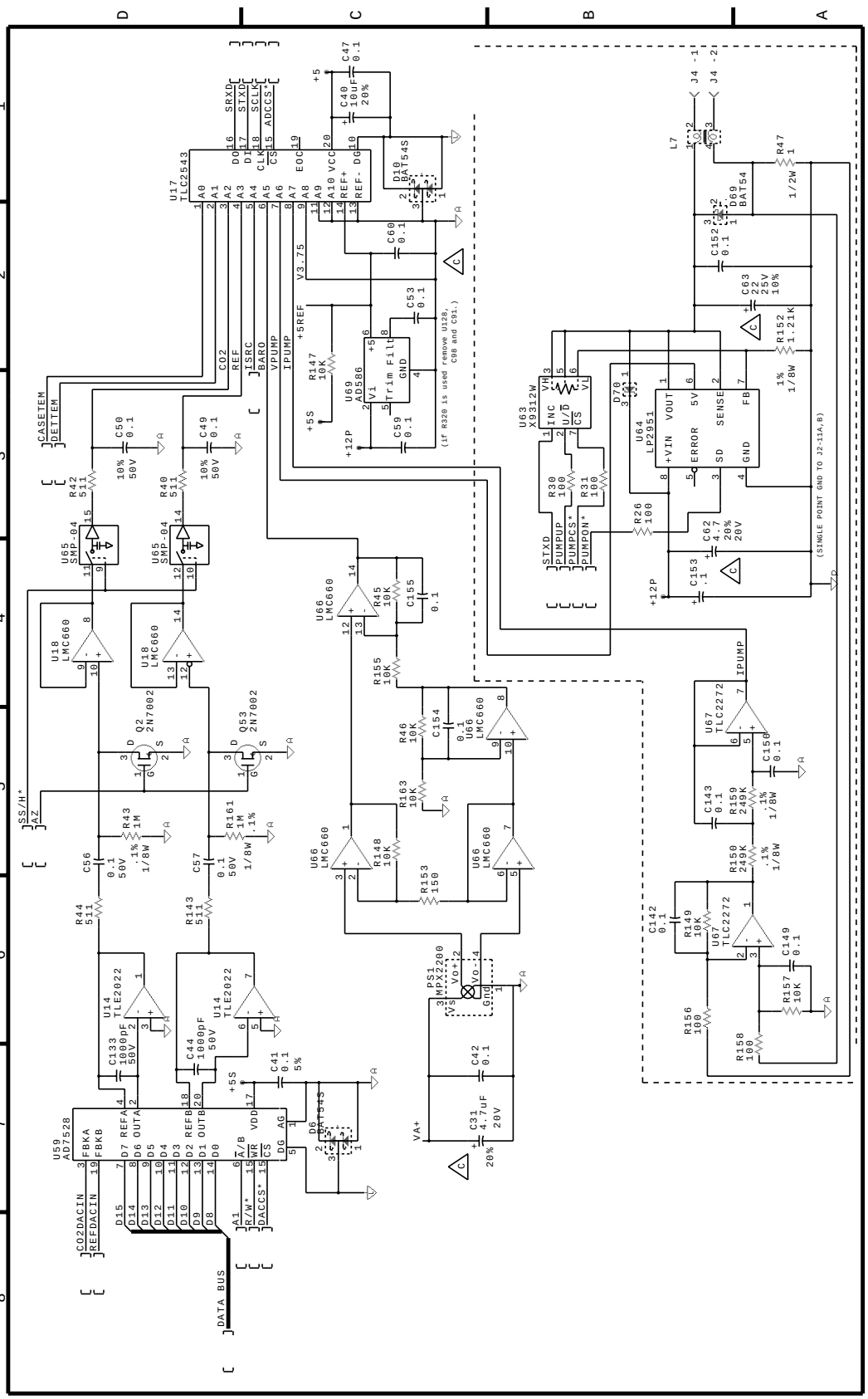

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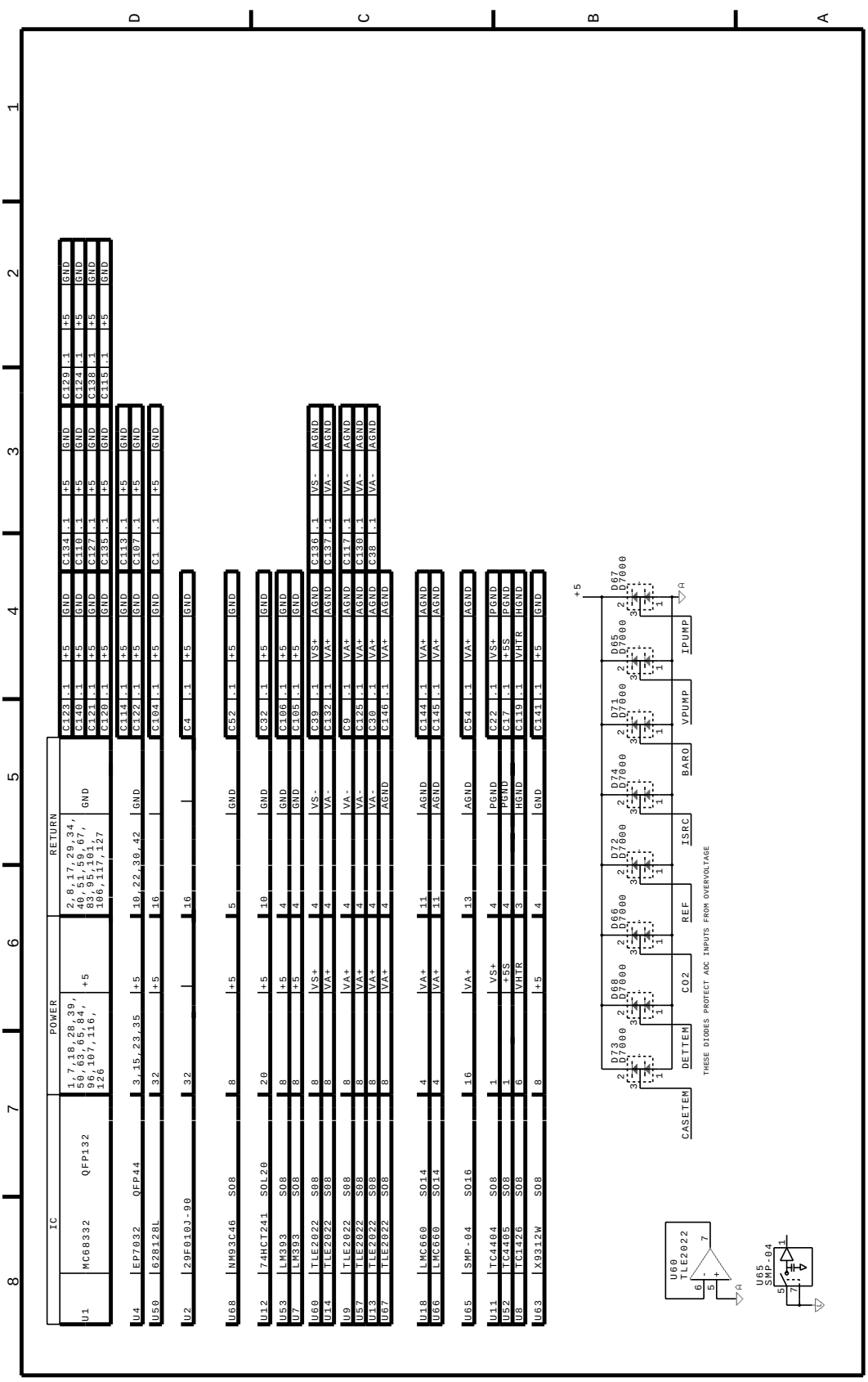
IC
POWER
RETURN
U1 MC68332 QFP132 1,7,18,28,39,50,63,65,84,96,107,116,126 +5 2,8,17,29,34,40,51,59,67,83,95,101,106,117,127 GND
U4 EP7032 QFP44 3,15,23,35 +5 10,22,30,42 GND
U50 628128L +5 32 16
U2 29F010J-90 32 16
U68 NM93C46 SO8 8 +5 5 GND
U12 74HCT241 SOL20 20 +5 10 GND
U53 LM393 SO8 8 +5 4 GND
U7 LM393 SO8 8 +5 4 GND
U60 TLE2022 SO8 8 VS+ 4 VS-
U14 TLE2022 SO8 8 VA+ 4 VA-
U9 TLE2022 SO8 8 VA+ 4 VA-
U57 TLE2022 SO8 8 VA+ 4 VA-
U13 TLE2022 SO8 8 VA+ 4 VA-
U67 TLE2022 SO8 8 VA+ 4 AGND
U18 LMC660 SO14 4 VA+ 11 AGND
U86 LMC660 SO14 4 VA+ 11 AGND
U65 SMP-04 SO16 16 VA+ 13 AGND
U11 TC4404 SO8 1 VS+ 4 PGND
U52 TC4405 SO8 1 +5S 4 PGND
U8 TC1426 SO8 6 VHTR 3 HGND
U63 X9312W SO8 8 +5 4 GND
C123 .1 +5 GND C134 .1 +5 GND C129 .1 +5
C140 .1 +5 GND C110 .1 +5 GND C124 .1 +5
C121 .1 +5 GND C127 .1 +5 GND C138 .1 +5
C120 .1 +5 GND C135 .1 +5 GND C115 .1 +5
C114 .1 +5 GND C113 .1 +5 GND
C122 .1 +5 GND C107 .1 +5 GND
C104 .1 +5 GND C1 .1 +5 GND
C4 .1 +5 GND
C52 .1 +5 GND
C32 .1 +5 GND
C106 .1 +5 GND
C105 .1 +5 GND
C39 .1 VS+ AGND C136 .1 VS- AGND
C132 .1 VA+ AGND C137 .1 VA- AGND
C9 .1 VA+ AGND C117 .1 VA- AGND
C125 .1 VA+ AGND C130 .1 VA- AGND
C36 .1 VA+ AGND C28 .1 VA- AGND
C146 .1 VA+ AGND
C144 .1 VA+ AGND
C145 .1 VA+ AGND
C54 .1 VA+ AGND
C22 .1 VS+ PGND
C17 .1 +5S PGND
C119 .1 VHTR HGND
C141 .1 +5 GND
+5
D73 D7000
D68 D7000
D66 D7000
D72 D7000
D74 D7000
D71 D7000
D65 D7000
D67 D7000
CASETEM
DETTEM
CO2
REF
ISRC
BARO
VPUMP
IPUMP
THESE DIODES PROTECT ADC INPUTS FROM OVERVOLTAGE
U60 TLE2022
U65 SMP-04

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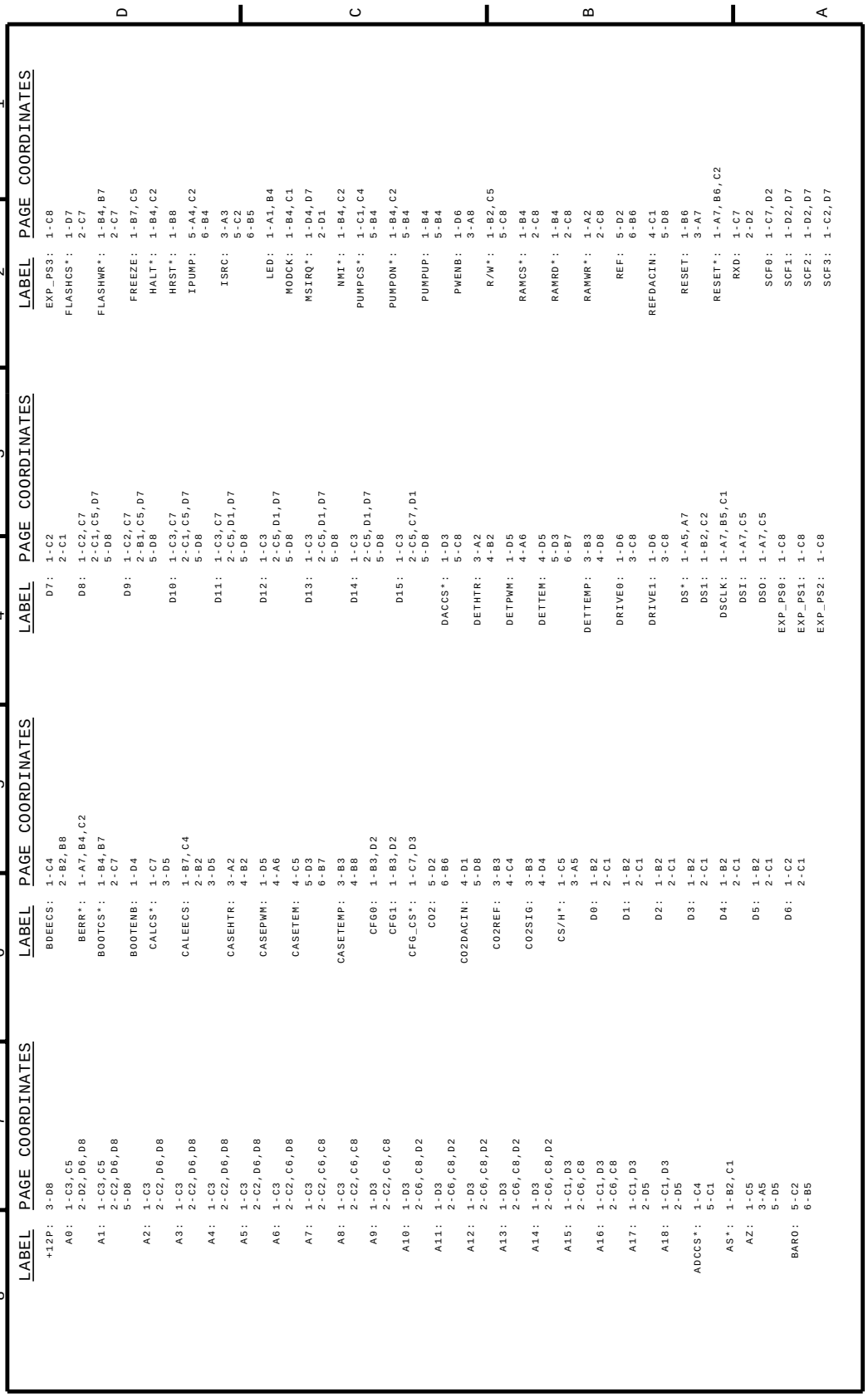

LABEL	PAGE COORDINATES
+12P:	3-D8
A0:	1-C3,C5
	2-D2,D6,D8
A1:	1-C3,C5
	2-C2,D6,D8
	5-D8
A2:	1-C3
	2-C2,D6,D8
A3:	1-C3
	2-C2,D6,D8
A4:	1-C3
	2-C2,D6,D8
A5:	1-C3
	2-C2,D6,D8
A6:	1-C3
	2-C2,C6,D8
A7:	1-C3
	2-C2,C6,C8
A8:	1-C3
	2-C2,C6,C8
A9:	1-D3
	2-C2,C6,C8
A10:	1-D3
	2-C6,C8,D2
A11:	1-D3
	2-C6,C8,D2
A12:	1-D3
	2-C6,C8,D2
A13:	1-D3
	2-C6,C8,D2
A14:	1-D3
	2-C6,C8,D2
A15:	1-C1,D3
	2-C6,C8
A16:	1-C1,D3
	2-C6,C8
A17:	1-C1,D3
	2-D5
A18:	1-C1,D3
	2-D5
ADCCS*:	1-C4
	5-C1
AS*:	1-B2,C1
AZ:	1-C5
	3-A5
	5-D5
BARO:	5-C2
	6-B5

LABEL	PAGE COORDINATES
BDEECS:	1-C4
	2-B2,B8
BERR*:	1-A7,B4,C2
BOOTCS*:	1-B4,B7
	2-C7
BOOTENB:	1-D4
CALCS*:	1-C7
	3-D5
CALEECS:	1-B7,C4
	2-B2
	3-D5
CASEHTR:	3-A2
	4-B2
CASEPWM:	1-D5
	4-A6
CASETEM:	4-C5
	5-D3
	6-B7
CASETEMP:	3-B3
	4-B8
CFG0:	1-B3,D2
CFG1:	1-B3,D2
CFG_CS*:	1-C7,D3
CO2:	5-D2
	6-B6
CO2DACIN:	4-D1
	5-D8
CO2REF:	3-B3
	4-C4
CO2SIG:	3-B3
	4-D4
CS/H*:	1-C5
	3-A5
D0:	1-B2
	2-C1
D1:	1-B2
	2-C1
D2:	1-B2
	2-C1
D3:	1-B2
	2-C1
D4:	1-B2
	2-C1
D5:	1-B2
	2-C1
D6:	1-C2
	2-C1

LABEL	PAGE COORDINATES
D7:	1-C2
	2-C1
D8:	1-C2,C7
	2-C1,C5,D7
	5-D8
D9:	1-C2,C7
	2-B1,C5,D7
	5-D8
D10:	1-C3,C7
	2-C1,C5,D7
	5-D8
D11:	1-C3,C7
	2-C5,D1,D7
	5-D8
D12:	1-C3
	2-C5,D1,D7
	5-D8
D13:	1-C3
	2-C5,D1,D7
	5-D8
D14:	1-C3
	2-C5,D1,D7
	5-D8
D15:	1-C3
	2-C5,C7,D1
	5-D8
DACCS*:	1-D3
	5-C8
DETHTR:	3-A2
	4-B2
DETPWM:	1-D5
	4-A6
DETTEM:	4-D5
	5-D3
	6-B7
DETTEMP:	3-B3
	4-D8
DRIVE0:	1-D6
	3-C8
DRIVE1:	1-D6
	3-C8
DS*:	1-A5,A7
DS1:	1-B2,C2
DSCLK:	1-A7,B5,C1
DSI:	1-A7,C5
DSO:	1-A7,C5
EXP_PS0:	1-C8
EXP_PS1:	1-C8
EXP_PS2:	1-C8

LABEL	PAGE COORDINATES
EXP_PS3:	1-C8
FLASHCS*:	1-D7
	2-C7
FLASHWR*:	1-B4,B7
	2-C7
FREEZE:	1-B7,C5
HALT*:	1-B4,C2
HRST*:	1-B8
IPUMP:	5-A4,C2
	6-B4
ISRC:	3-A3
	5-C2
	6-B5
LED:	1-A1,B4
MODCK:	1-B4,C1
MSIRQ*:	1-D4,D7
	2-D1
NMI*:	1-B4,C2
PUMPCS*:	1-C1,C4
	5-B4
PUMPON*:	1-B4,C2
	5-B4
PUMPUP:	1-B4
	5-B4
PWENB:	1-D6
	3-A8
R/W*:	1-B2,C5
	5-C8
RAMCS*:	1-B4
	2-C8
RAMRD*:	1-B4
	2-C8
RAMWR*:	1-A2
	2-C8
REF:	5-D2
	6-B6
REFDACIN:	4-C1
	5-D8
RESET:	1-B6
	3-A7
RESET*:	1-A7,B6,C2
RXD:	1-C7
	2-D2
SCF0:	1-C7,D2
SCF1:	1-D2,D7
SCF2:	1-D2,D7
SCF3:	1-C2,D7

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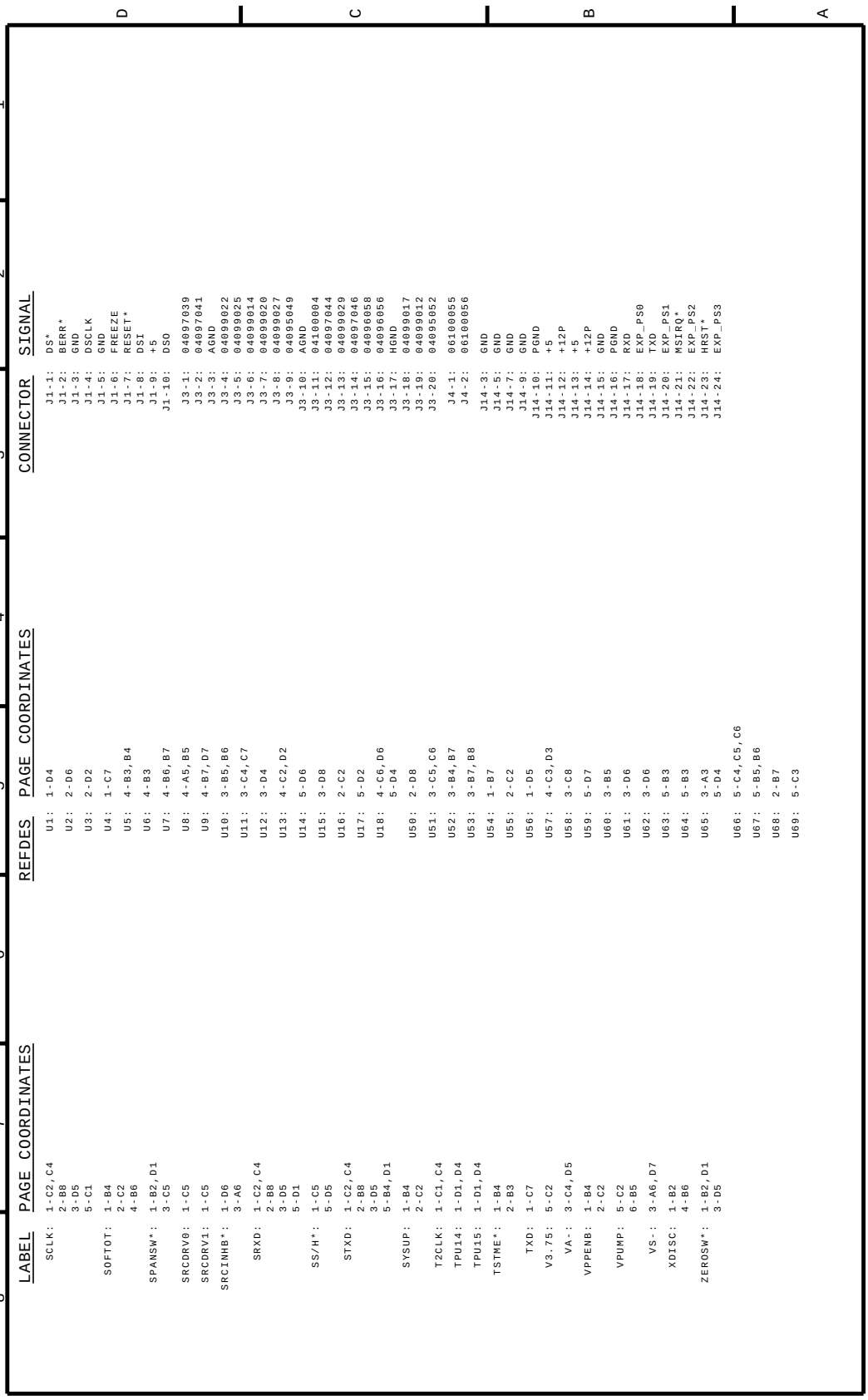


LABEL	PAGE COORDINATES
SCLK:	1-C2,C4
	2-B8
	3-D5
	5-C1
SOFTOT:	1-B4
	2-C2
	4-B6
SPANSW*:	1-B2,D1
	3-C5
SRCDRV0:	1-C5
SRCDRV1:	1-C5
SRCINHB*:	1-D6
	3-A6
SRXD:	1-C2,C4
	2-B8
	3-D5
	5-D1
SS/H*:	1-C5
	5-D5
STXD:	1-C2,C4
	2-B8
	3-D5
	5-B4,D1
SYSUP:	1-B4
	2-C2
T2CLK:	1-C1,C4
TPU14:	1-D1,D4
TPU15:	1-D1,D4
TSTME*:	1-B4
	2-B3
TXD:	1-C7
V3.75:	5-C2
VA-:	3-C4,D5
VPPENB:	1-B4
	2-C2
VPUMP:	5-C2
	6-B5
VS-:	3-A6,D7
XDISC:	1-B2
	4-B6
ZEROSW*:	1-B2,D1
	3-D5

REFDES	PAGE COORDINATES
U1:	1-D4
U2:	2-D6
U3:	2-D2
U4:	1-C7
U5:	4-B3,B4
U6:	4-B3
U7:	4-B6,B7
U8:	4-A5,B5
U9:	4-B7,D7
U10:	3-B5,B6
U11:	3-C4,C7
U12:	3-D4
U13:	4-C2,D2
U14:	5-D6
U15:	3-D8
U16:	2-C2
U17:	5-D2
U18:	4-C6,D6
	5-D4
U50:	2-D8
U51:	3-C5,C6
U52:	3-B4,B7
U53:	3-B7,B8
U54:	1-B7
U55:	2-C2
U56:	1-D5
U57:	4-C3,D3
U58:	3-C8
U59:	5-D7
U60:	3-B5
U61:	3-D6
U62:	3-D6
U63:	5-B3
U64:	5-B3
U65:	3-A3
	5-D4
U66:	5-C4,C5,C6
U67:	5-B5,B6
U68:	2-B7
U69:	5-C3

CONNECTOR	SIGNAL
J1-1:	DS*
J1-2:	BERR*
J1-3:	GND
J1-4:	DSCLK
J1-5:	GND
J1-6:	FREEZE
J1-7:	RESET*
J1-8:	DSI
J1-9:	+5
J1-10:	DSO
J3-1:	04097039
J3-2:	04097041
J3-3:	AGND
J3-4:	04099022
J3-5:	04099025
J3-6:	04099014
J3-7:	04099020
J3-8:	04099027
J3-9:	04095049
J3-10:	AGND
J3-11:	04100004
J3-12:	04097044
J3-13:	04099029
J3-14:	04097046
J3-15:	04096058
J3-16:	04096056
J3-17:	HGND
J3-18:	04099017
J3-19:	04099012
J3-20:	04095052
J4-1:	06100055
J4-2:	06100056
J14-3:	GND
J14-5:	GND
J14-7:	GND
J14-9:	GND
J14-10:	PGND
J14-11:	+5
J14-12:	+12P
J14-13:	+5
J14-14:	+12P
J14-15:	GND
J14-16:	PGND
J14-17:	RXD
J14-18:	EXP_PS0
J14-19:	TXD
J14-20:	EXP_PS1
J14-21:	MSIRQ*
J14-22:	EXP_PS2
J14-23:	HRST*
J14-24:	EXP_PS3

For your notes

5 DATA ACQUISITION ASSEMBLY AND PCB

Introduction 5-2

Exploded View PN 414887-001B 5-3

Parts List PN 414887-001B 5-4

Switches and Controls PN 800776-001B 5-5

PCB Connectors PN 800776-001B 5-6

Parts Location Diagram PN 800776-001B 5-8

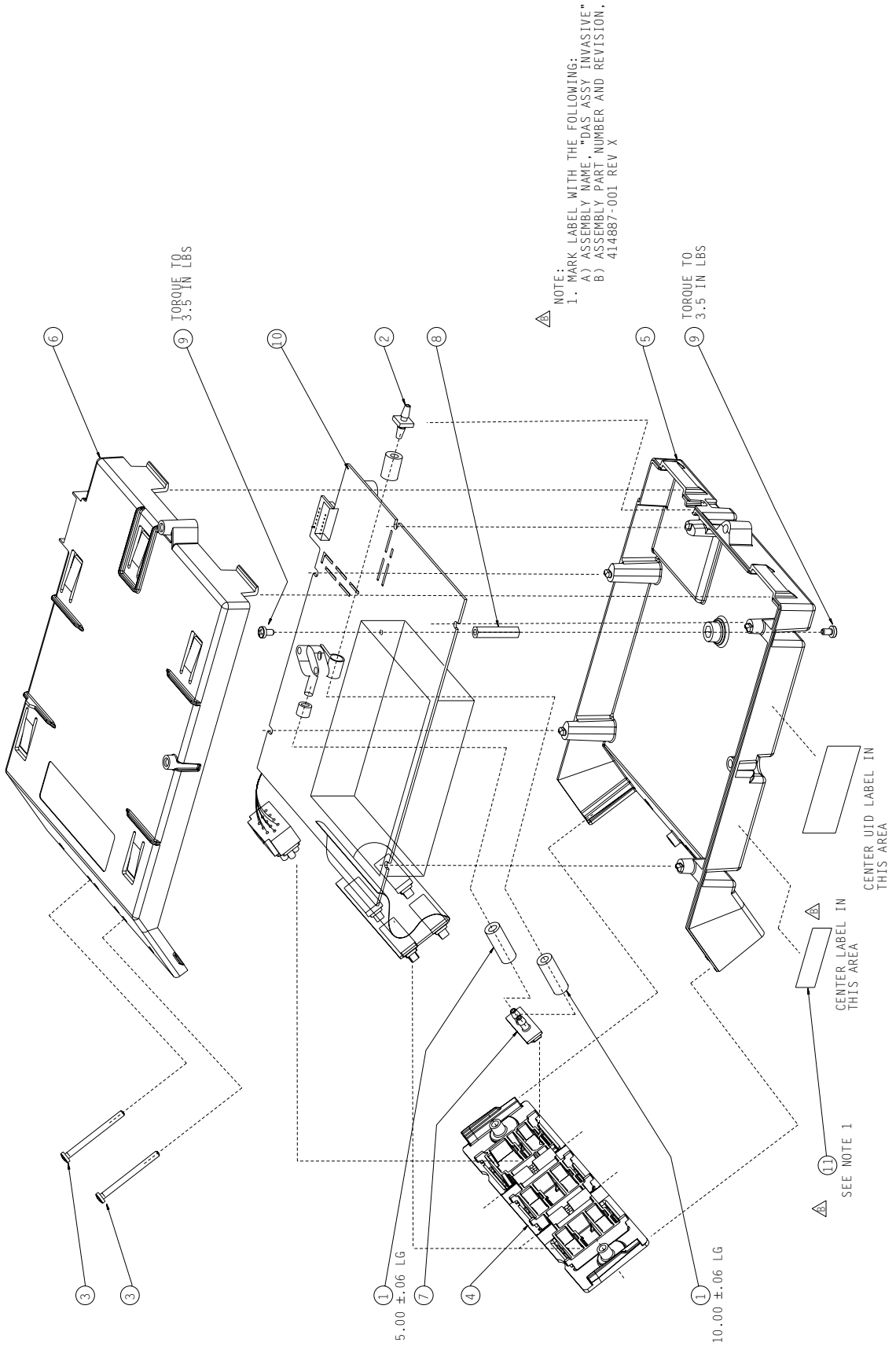
Parts List PN 800776-001B 5-10

Schematic Diagram PN SD800776-001B 5-14

Introduction

This chapter presents information about the data acquisition assembly, pn 414887-001B, and the data acquisition PCB, pn 800776-001B.

Exploded View PN 414887-001B



Parts List PN 414887-001B

Item	Reference Designation	Parts List	Part Number	Qty
1		Tubing, Silastic	401582-001	AR
2		Connector, Barb	404425-001	1
3		Screw, PNH, 6-32 x 1.69, Steel Coat	405318-006	1
4		Connector Frame, Invasive	412852-002	1
5		Housing	412853-001	1
6		Cover	412854-001	1
7		Socket, Keyed, 45-Pin	414640-001	1
8		Standoff, 1/4 Hex, Female, No. 6, Nylon	414784-001	1
9		Screw, BDGH, Phillips, 6-32 x 1/4	45074-608	2
10		Data Acquisition Processor PCB Assembly	800776-001	1
11		Label, Blank, 1.2 x 0.6	404525-008	1

Switches and Controls PN 800776-001B

Listed below are all switches, controls, and LEDs found on the circuit board, pn 800776-001B.

Table 5-1. Switches and Controls

Designator	Name	Function
DS1	Red light-emiting diode	DAS error status LED
DS2	Green light-emiting diode	DAS okay status LED

PCB Connectors PN 800776-001B

Pin-by-pin descriptions and the signal names for each internal PCB connector are described below.

Table 5-2. Connector J8 (12-Pin Main Processor Interface Connector)

Pin	Name	Input/ Output	Description
1	PROC_RXD	I	Processor receive data
2	GND	I	Common ground reference
3	PROC_TXD	O	Processor transmit data
4	GND	O	Common ground reference
5	DAS_RESET*	I	Data acquisition system reset
6	GND	I	Common ground reference
7	12V_MAIN	I	+12 V power
8	PWRRTN	I	Power return
9	12V_MAIN	I	+12 V power
10	PWRRTN	I	Power return
11	+5	I	+5 V power
12	GND	I	Common ground reference

Table 5-3. Connector J13 (10-Pin Debug Port Interface Connector)

Pin	Name	Input/ Output	Description
1	DS*	O	Low-data strobe from the processor
2	BERR*	I	Bus error signal
3	ISOGND	O	Isolated ground reference
4	DSCLK	I	Development serial clock
5	ISOGND	O	Isolated ground reference
6	FREEZE	O	Freeze
7	RESET*	I/O	Reset signal
8	DSI	I/O	Development serial input
9	+5ISO	O	Isolated +5 V power
10	DSO	O	Development serial output

Table 5-4. Connector J17 (11-Pin Temperature Cable Connector)

Pin	Name	Input/ Output	Description
1	CP_+0.25VREF	O	+0.25 V reference
2	CP_TEMP1	I	Input from temperature sensor, channel 1
3	NC		
4	CP_ISOAGND	O	Isolated analog ground reference
5	CP_400/700	I	Series 400/700 thermistor type
6	CP_FSHIELD	O	Cable shield
7	CP_ISOAGND	O	Isolated analog ground reference
8	CP_TEMP2	I	Input from temperature sensor, channel 2
9	NC		
10	CP_TEMP_PROBE*	I	Temperature probe
11	CP_ISOGND	O	Isolated ground reference

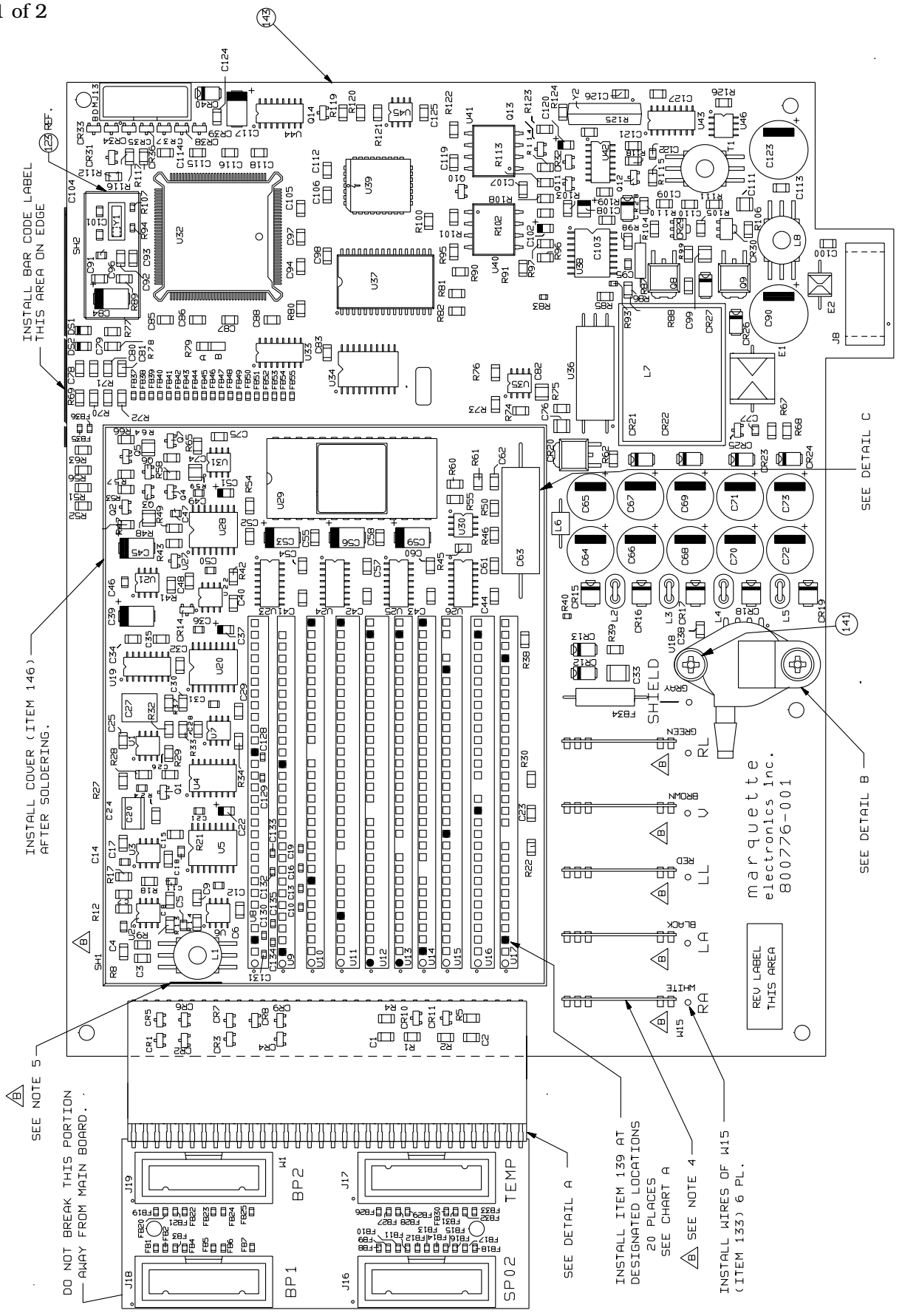
Table 5-5. Connector J18 and J19 (11-Pin Invasive Blood Pressure Cable Connector)

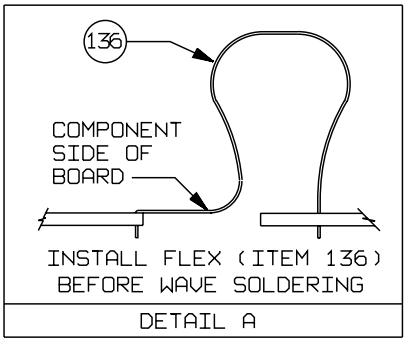
Pin	Name	Input/ Output	Description
1	†CP_BPn_EXCI+	O	Non-inverted BP transducer excitation voltage
2	†CP_BPn_SIG+	I	Non-inverted BP transducer signal
3	NC		
4	CP_ISOAGND	O	Isolated analog ground reference
5	NC		
6	CP_FSHIELD	O	Cable shield
7	CP_BPn_EXCI-	O	Inverted BP transducer excitation voltage
8	CP_BPn_SIG-	I	Inverted BP transducer signal
9	NC		
10	CP_BPn_ID	I/O	BP probe identification
11	NC		

† "n" in the symbol name refers to the blood pressure channel number, 1 or 2.

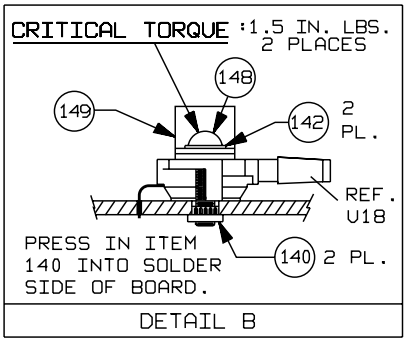
Parts Location Diagram PN 800776-001B

Page 1 of 2

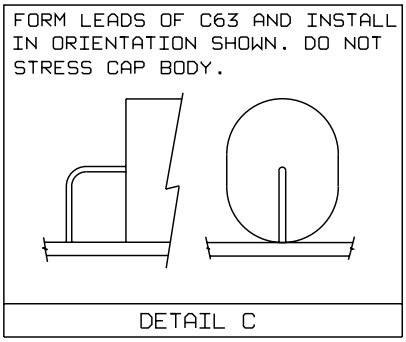

COMPONENT SIDE OF BOARD
INSTALL BAR CODE LABEL THIS AREA ON EDGE
INSTALL COVER (ITEM 146) AFTER SOLDERING.
SEE NOTE 5
DO NOT BREAK THIS PORTION AWAY FROM MAIN BOARD.
SEE DETAIL A
INSTALL ITEM 139 AT DESIGNATED LOCATIONS 20 PLACES SEE CHART A
SEE NOTE 4
INSTALL WIRES OF W15 (ITEM 133) 6 PL.
SEE DETAIL B
SEE DETAIL C
REV LABEL THIS AREA
marquette electronics inc. 800776-001
SHIELD
BP1
BP2
TEMP
SP02



DETAIL A



DETAIL B



DETAIL C

CHART A	
U8	3,19
U9	2,18
U10	8,30
U11	5,30
U12	1,29
U13	1,29
U14	2,30
U15	12,26
U16	14,29
U17	3,27

SOCKET PIN LOCATIONS

NOTES:

1. UNLESS OTHERWISE SPECIFIED, ALL RESISTANCE VALUES ARE IN OHMS, ALL CAPACITANCE VALUES ARE IN MICROFARADS.
2. THE BAR SHOWN ON ALL POLARIZED CAPACITORS DENOTES POSITIVE TERMINAL.
3. (B) THE FOLLOWING COMPONENT(S) APPEAR ON THE SILKSCREEN, BUT ARE NOT USED ON THIS ASSEMBLY, HOLES MAY FILL WITH SOLDER: C89, R3, R6, R7, R10, R11, R15, R16, R19, R20, R23, R25, R26, R31, R35, R36, R44, R84, R92, TP1, TP2, TP3.
4. (B) INSTALL HYBRIDS (ITEM 150) INTO THE VIAS OF R6, R10, R19, R25, R35 AS SHOWN.
5. (B) ADD 1 INCH OF KAPTON TAPE (ITEM 151) TO THE SHIELD NEXT TO L1 AS SHOWN.

Parts List PN 800776-001B

Reference Designation	Description	Part Number	Qty
C1, 2, 6-9, 15, 17, 23, 25, 26, 28-30, 32, 34, 35, 38, 40-44, 48, 52, 54, 55, 57, 58, 60-62, 74, 75, 78-81, 83, 85-88, 91-94, 97, 98, 100, 103, 105-107, 109, 110, 112-116, 118, 119, 121, 124-127	Cap, Cer, 0.1µF, 20%, 50V	404370-001	68
C3	Cap, Cer, 0.1µF, 5%, 50V, SM	1182-104	1
C4, 101, 104	Cap, Cer, 22pF, 5%, 50V, SM	1181-220	3
C5, 18, 21, 36, 46, 47, 49, 96, 122	Cap, Cer, 0.01µF, 5%, 50V, SM	1182-103	9
C10, 13, 16, 19, 128-135	Cap, Cer, 0.1µF, 5%, 16V	411575-002	12
C11	Cap, Cer, 470pF, 5%, 50V, SM	1181-471	1
C12, 14, 31, 50, 95	Cap, Cer, 0.001µF, 5%, 50V, SM	1181-102	5
C20	Cap, Cer, 0.33µF, 5%, 50V, SM	1182-334	1
C22, 37, 51, 102, 120	Cap, Tant, 1µF, 10%, 16V, SM	403253-001	5
C24	Cap, Cer, 150pF, 5%, 50V, SM	1181-151	1
C27	Cap, PP, 0.01µF, 1%, 63V	408822-001	1
C33	Cap, Cer, 0.47µF, 20%	1187-474	1
C39, 45	Cap, Tant, 22µF, 20%, 16V, SM	1174-226	2
C53, 56, 59, 117	Cap, Tant, 10µF, 20%, 25V, SM	1152-106	4
C63	Cap, MPE, 10µF, 5%, 35V	1215-106	1
C64-69	Cap, Al, 150µF, 20%, 35V	404314-004	6
C70-73	Cap, Tant, 68µF, 20%, 63V	414376-001	4
C76	Cap, Cer, 0.01µF, 10%, 100V, SM	403029-001	1
C77	Cap, Cer, 270pF, 5%, 50V, SM	1181-271	1
C82	Cap, Cer, 0.22µF, 20%, 50V, SM	1187-224	1
C84	Cap, Tant, 47µF, 20%, 10V, SM	405585-001	1
C90, 123	Cap, Al, 270µF, 20%, 35V	404314-003	2
C99, 111	Cap, Cer, 0.0022µF, 5%, 100V, SM	403030-001	2
C108	Cap, Tant, 4.7µF, 20%, 10V, SM	1176-475	1
CR1, 2, 5, 6, 10, 11, 25	Diode Pair, Series, SM D7000	2013-201	7
CR3, 4, 7-9, 33-39	Diode, SM FDSO1503	2414-001	12
CR12, 13, 23, 24	Diode, Rectifier, 1A, 100V, SM MURS110T3	403190-001	4
CR14	Diode, SM MMAD4148	401980-001	1
CR15-17	Diode, Transient Voltage Suppressor, 5V, 600W P6SMB6.8AT1	403189-001	3
CR18, 19	Transorb, 15V, 5%, 600W SM6T15A	403188-001	1

Reference Designation	Description	Part Number	Qty
CR20	Diode, Schottky, SM MBRD340	403929-001	1
CR21, 22, 26-28, 40	Diode, Schottky, Barrier, 1A, 40V, SM MBRS140T3	403187-001	6
CR29, 30	Diode, Zener, SM BZV49C18	403007-001	2
CR31	Diode, Schottky, SM BAT54	401985-001	1
CR32	Diode Pair, Common Anode, SM D2836	402544-001	1
DS1	Light-Emitting Diode, Red, SM 1206	414417-002	1
DS2	Light-Emitting Diode, Green, SM 1206	414417-004	1
E1	Surge Protector, 7.5kV, ±15%	1931-001	1
E2	Surge Protector, 90V	1931-101	1
FB1-33, 35-55	Ferrite Bead BLM11A20	414061-001	54
FB34	Bead, Ferrite	415269-001	1
J8	Connector, PC Header, 12-Pin	413649-002	1
J13	Connecter, PC Header, Vertical, 10-Pin	17030-010	1
J16	Connector, SpO2 (Blue)	401762-008	1
J17	Connector, TEMP/CO (Brown)	401762-021	1
J18, 19	Connector, BP (Red)	401762-004	2
L1, 8	Choke, Common Mode, SM	403105-001	2
L2-5	Inductor, Bead	1426-001	4
L6	Ferrite Bead	403921-001	1
L7	Inductor, Coupled, Critical Component	403281-001	1
Q1	Transistor, JFET, P-Channel, SM MMBFJ117	404417-001	1
Q2, 5	Transistor, PNP, SM T3906	2511-101	2
Q3, 4, 11	Transistor, NPN, SM T3904	2511-001	3
Q6, 7	Transistor, MOS-FET, N-Channel, Enhancement Mode, SM VN0605T	406267-001	2
Q8, 9	Transistor, MOS-FET, N-Channel, SM IRFR024	403047-001	2
Q10, 13, 14	Transistor, MOS-FET, N-Channel, SM 2N7002	402414-001	3
R1, 2, 8, 9, 43, 45, 69-72, 81, 91, 95, 122, 124, 126	Res, Cer, 1K, 1%, 1/8W, SM	1082-103	16
R4, 5, 22, 30, 38, 42, 50-52, 54, 56, 61, 63, 79, 80, 82, 96, 97, 100, 103, 109, 112, 116, 117	Res, Cer, 10K, 1%, 1/8W, SM	1082-104	24
R12, 13, 21, 28, 39	Res, Cer, 499K, 1%, 1/8W, SM	1082-499	5
R14	Res, Cer, 4.02K, 1%, 1/8W	1082-917	1
R17, 18	Res, Cer, 23.2K, 1%, 1/8W	1082-988	2
R24	Res, Cer, 475 Ω, 1%, 1/8W, SM	1082-875	1
R27, 29, 41, 53, 58, 65, 66, 125	Res, Cer, 4.99K, 1%, 1/8W, SM	1082-101	8
R32, 37	Res, Cer, 47.5K, 1%, 1/8W, SM	1082-752	2
R33, 62	Res, Cer, 150Ω, 1%, 1/8W, SM	1082-767	2
R34, 46, 67, 121	Res, Cer, 2K, 1%, 1/8W, SM	1082-201	4
R40, 83, 93	Res, Cer, 0 Ω, 1%, 1/16W, SM	410334-027	3

Reference Designation	Description	Part Number	Qty
R47, 57	Res, Cer, 100K, 1%, 1/8W, SM	1082-100	2
R48, 59, 64	Res, Cer, 10.0K, 1%, 1/4W	407468-002	3
R49	Res, Chip, 357 Ω, 1%, 1/8W, SM	1082-846	1
R55, 60	Res, Cer, 49.9 Ω, 1%, 1/8W, SM	1082-799	2
R68	Res, Cer, 51.1Ω, 10%, 1/4W, SM	1082-789	1
R73, 76	Res, Cer, 40.2K, 10%, 1/4W, SM	1082-792	2
R74	Res, Cer, 511Ω, 10%, 1/4W, SM	1082-794	1
R75	Res, Cer, 43Ω, 10%, 1/4W, SM	403025-001	1
R77, 78, 101, 114	Res, Chip, 681 Ω, 1%, 1/8W	1082-865	4
R85	Res, Cer, 3.4K, 1%, 1/8W, SM	1082-759	1
R86	Res, Cer, 240 Ω, 5%, 1/8W, SM	1081-471	1
R87	Res, WW, 0.1Ω, 5%, 1/2W	1017-003	1
R88, 111	Res, Cer, 3.3Ω, 10%, 1/4W, SM	403026-001	2
R89, 115	Res, Cer, 100Ω, 1%, 1/8W, SM	1082-755	2
R90, 98, 110, 119, 123	Res, Cer, 10Ω, 1%, 1/8W, SM	1082-786	5
R94	Res, Cer, 10M, 5%, 1/16W, SM	411723-003	1
R99, 106	Res, Cer, 22 Ω, 5%, 1/8W, SM	1081-220	2
R102	Res, Cer, 3.48K, 10%, 1/4W, SM	1082-919	1
R104, 105	Res, Cer, 2.21K, 1%, 1/8W, SM	1082-787	2
R107	Res, Cer, 332K, 1%, 1/16W, SM	410334-115	1
R108	Res, Cer, 8.06K, 10%, 1/4W, SM	1082-920	1
R113	Res, Cer, 200K, 1%, 1/8W, SM	1082-200	1
R118	Res, Cer, 51.1K, 10%, 1/4W, SM	1082-772	1
R120	Res, Cer, 332 Ω, 1%, 1/8W, SM	1082-884	1
SH1	Shield, Fence	414712-001	1
SH2	Shield, Crystal (item 123)	411267-002	1
T1	Transformer, SM	403106-001	1
U1, 3, 6, 7, 22	Operational Ampl, Dual TLE2022	406329-001	5
U2	Operational Ampl, SM LF356	3147-356	1
U4	Res, Ntwk, 10K, 0.1%, SM	405134-001	1
U5, 20, 28	DAC, 12-Bit, SM 7543	405439-001	3
U8	Hybrid, Dual Invasive BP Amplifier	400867-001	1
U8-3, 8-19, 9-2, 9-18, 10-8, 10-30, 11-5, 11-30, 12-1, 12-29, 13-1, 13-29, 14-2, 14-30, 15-12, 15-26, 16-14, 16-29, 17-3, 17-27	Socket, Mini	1818-201	20
U9	Hybrid, Quad Invasive BP Driver	401607-001	1
U10	Hybrid, Temperature	800910-001	1
U11	Hybrid, NBP	404303-001	1
U12	Hybrid, ECG Final Amplifier	401787-001	1
U13	Hybrid, ECG Pacemaker Rejection	401786-001	1
U14	Hybrid, ECG Pacemaker Detection	401785-001	1

Reference Designation	Description	Part Number	Qty
U15	Hybrid, ECG Preamplifier	400869-004	1
U16	Hybrid, RESP Carrier	400870-001	1
U17	Hybrid, RESP Demodulator	400871-004	1
U18	Sensor, Pressure, 7.3PSI, Compensated	404406-004	1
U19	Analog Switch, SPST, CMOS, <35Ω, Quad DG413DY	408821-001	1
U21	Volt Rgltr, Adj, SM LP2951A	3076-001	1
U23-26	Analog Multiplexer, 4-Channel, Dual, SM DG408DY/508DY	402024-001	4
U27	Voltage Reference, Shunt, SM LM4040	411568-002	1
U29	ADC, 12-Bit, Custom	405548-001	1
U30	Operational Ampl, JFET, SM LT1055	402396-001	1
U31	Operational Ampl, JFET, Dual, SM MC34182D	401292-001	1
U32	Microcontroller, 16-MHz, SM 68332	408794-001	1
U33, 44	Res Ntwk, 10K	1061-103	2
U34	Buffer/Driver, Octal, SM HC541	401974-001	1
U35	Volt Rgltr, SM TL431ACD	403046-001	1
U36	Isolator, Optically Coupled OPI120	405050-001	1
U37	RAM, Static, 128K x 8-Bit, 70nS, SM 628128	406255-002	1
U38	Pulse Width Modulator, SM UC3846	402990-001	1
U39	PROM, Eagle 3000, DAS Boot, V1A	415533-001	1
U40, 41	Isolator, Optically Coupled, SM 2611	408825-001	2
U42	Inverter, Schmitt Trigger, Hex, SM HC14	3038-014	1
U43	Counter, Down, Synchronous, 8-Bit, SM HC40103	401432-001	1
U45	Sensor, Undervoltage, 4.6V, SM MC34064D5	408952-001	1
U46	Isolator, Optically Coupled, SM MOC213	403040-001	1
W1	Flex Circuit Assembly, Eagle 3000 DAS (item 136, see Detail A)	415270-002	1
W15	Harness Assembly, ECG Receptacle, 5-Lead	414831-001	1
Y1	Crystal, 31.2kHz, SM	408946-001	1
Y2	Oscillator, CMOS, 4MHz	402987-001	1
	Insert, Threaded, 4-40 (item 140 for U18)	404158-001	2
	Screw, PNH, Phillips, 4-40 x 1/2 (item 141 for U18)	45000-408	1
	Washer, Flat, SST, No 4 (item 142 for U18)	4520-004	2
	Shield, Cover, Hybrid (item 146 for SH1)	414712-002	1
	Screw, PNH, Phillips, 4-40 x 5/8 (item 148 for U18)	45000-410	1
	Clamp, Cable (item 149 for U18)	415363-001	1
	Hybrid, Defib Protection	800936-001	5
	Tape (item 151 applied on shield, item 146, next to L1)	4835-001	AR
	Circuit Board (item 143)	800777-001B	1
	Schematic Diagram	SD800776-001B	1

Schematic Diagram PN SD800776-001B

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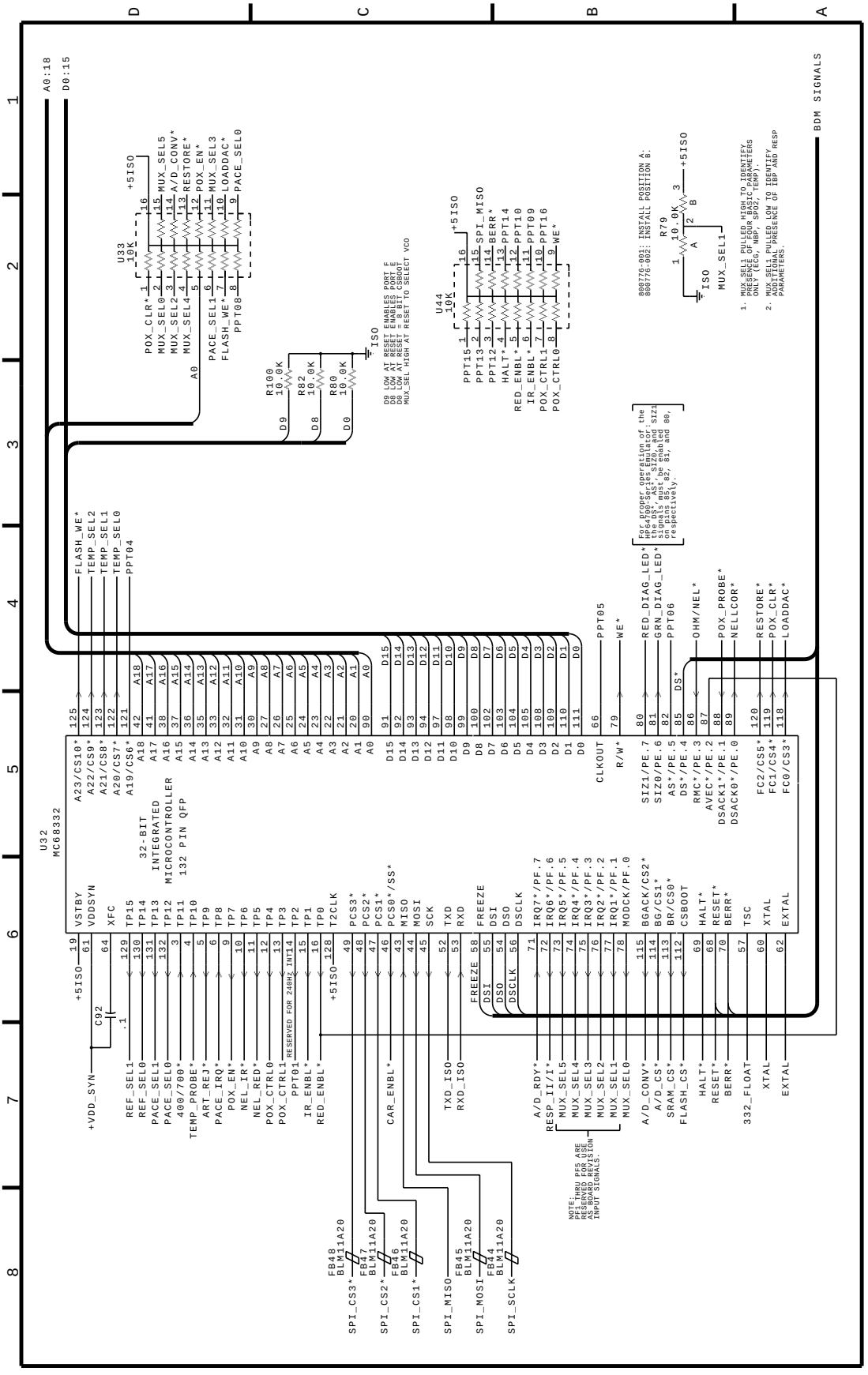

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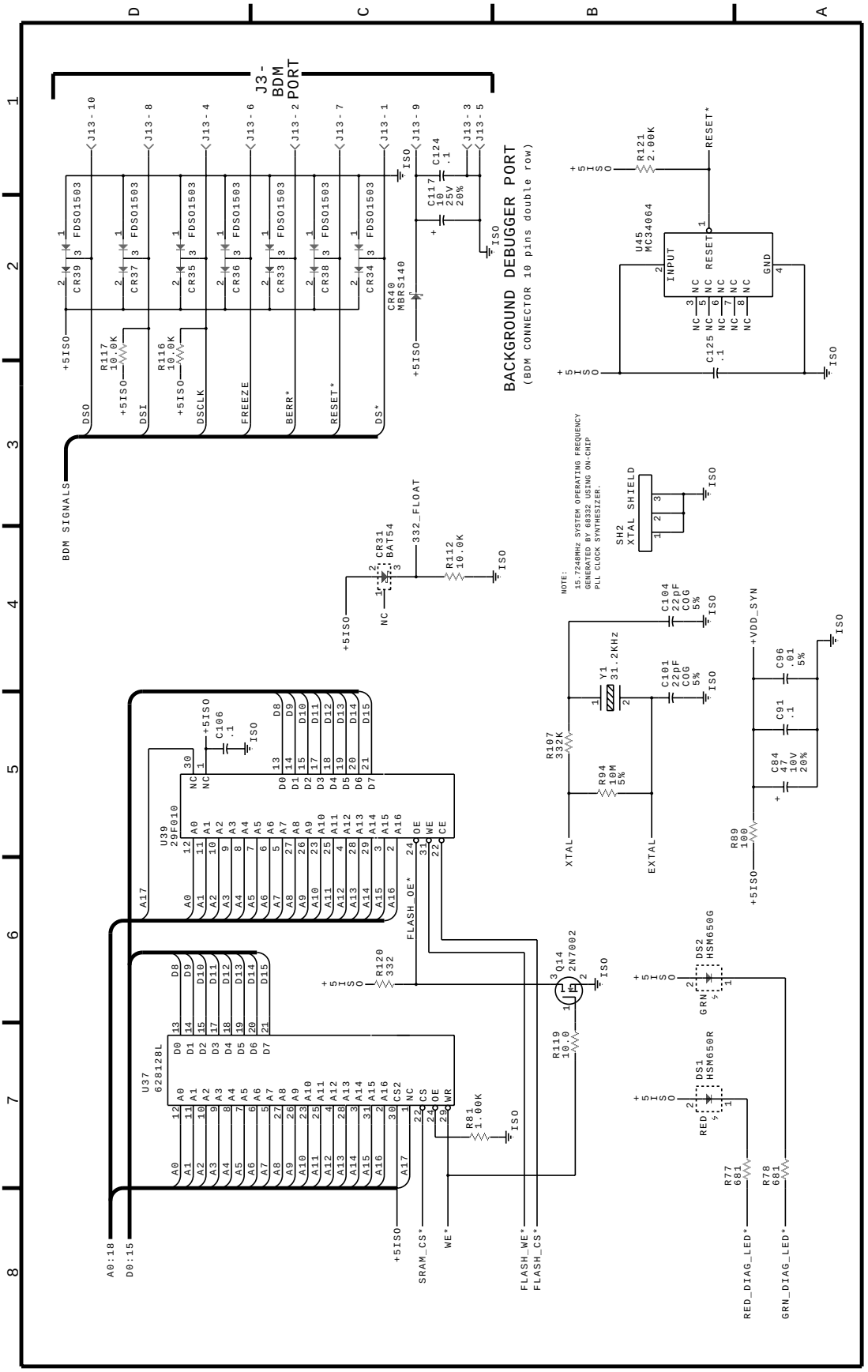
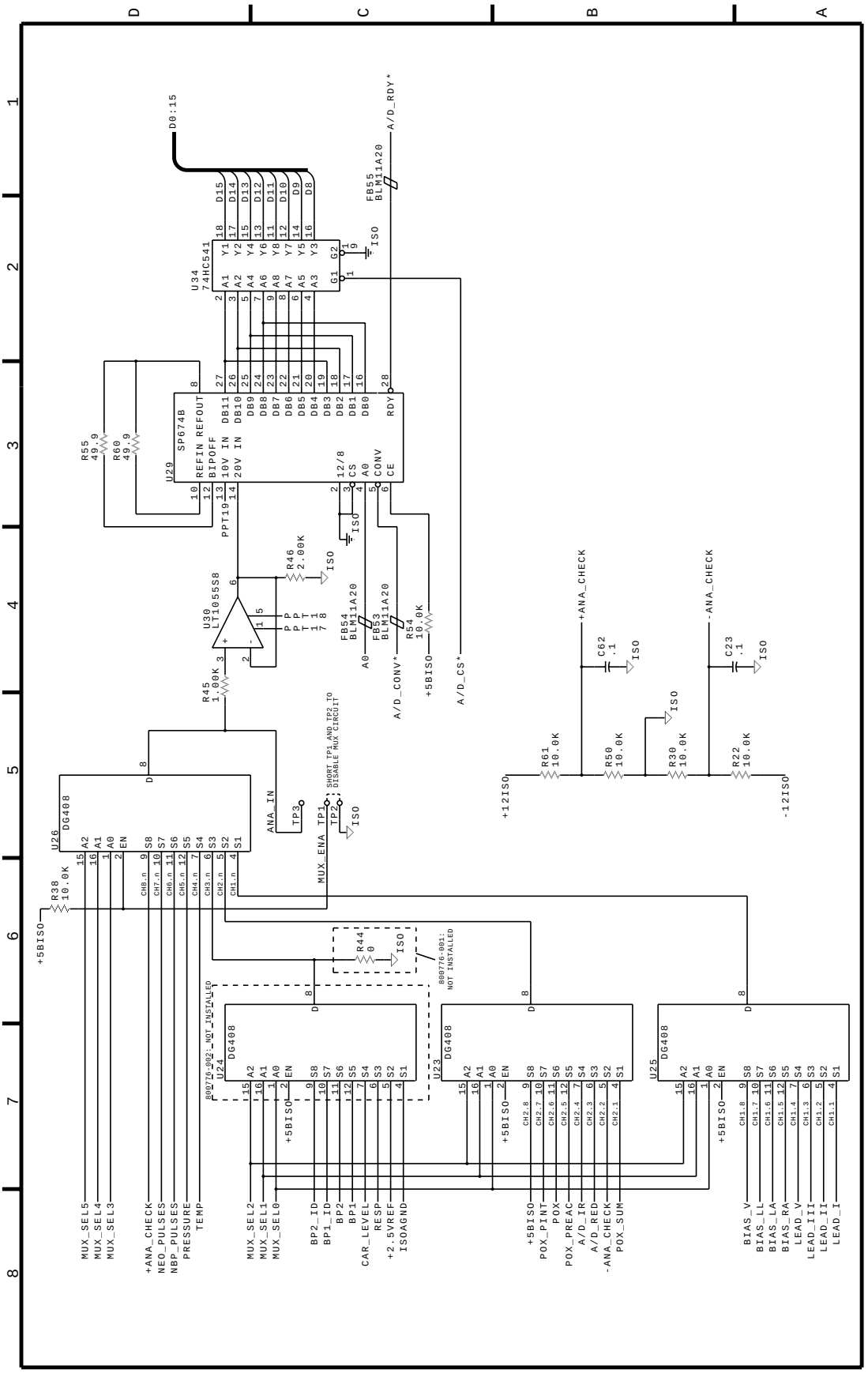

BACKGROUND DEBUGGER PORT
(BDM CONNECTOR 10 pins double row)
J3- BDM PORT
BDM SIGNALS
DSO
DSI
DSCLK
FREEZE
BERR*
RESET*
DS*
+5ISO
ISO
CR39
CR37
CR35
CR36
CR33
CR38
CR34
FDS01503
CR40 MBRS140
R117 10.0K
R116 10.0K
C117 10 25V 20%
C124 .1
R121 2.00K
U45 MC34064
INPUT
RESET
GND
C125 .1
NOTE:
15.7248MHz SYSTEM OPERATING FREQUENCY
GENERATED BY 68332 USING ON-CHIP
PLL CLOCK SYNTHESIZER.
SH2 XTAL SHIELD
CR31 BAT54
332_FLOAT
R112 10.0K
C104 22pF COG 5%
C101 22pF COG 5%
Y1 31.2KHz
R107 332K
R94 10M 5%
XTAL
EXTAL
C106 .1
U39 29F010
U37 628128L
A17
A0:18
D0:15
FLASH_OE*
FLASH_WE*
FLASH_CS*
SRAM_CS*
WE*
R120 332
Q14 2N7002
R119 10.0
R81 1.00K
DS2 HSM650G
DS1 HSM650R
GRN
RED
R77 681
R78 681
RED_DIAG_LED*
GRN_DIAG_LED*
R89 100
C84 47 10V 20%
C91 .1
C96 .01 5%
+VDD_SYN


D0:15
A/D_RDY*
U34
74HC541
FB55
BLM11A20
ISO
U29
SP674B
REFIN REFOUT
BIPOFF
10V IN
20V IN
DB11
DB10
DB9
DB8
DB7
DB6
DB5
DB4
DB3
DB2
DB1
DB0
RDY
12/8
CS
A0
CONV
CE
R55
49.9
R60
49.9
PPT19
R46
2.00K
U30
LT1055S8
FB54
BLM11A20
FB53
BLM11A20
R54
10.0K
+5BISO
A/D_CONV*
A/D_CS*
R45
1.00K
+ANA_CHECK
C62
.1
-ANA_CHECK
C23
.1
R61
10.0K
R50
10.0K
R30
10.0K
R22
10.0K
+12ISO
-12ISO
U26
DG408
R38
10.0K
ANA_IN
TP3
MUX_ENA
TP1
TP2
SHORT TP1 AND TP2 TO DISABLE MUX CIRCUIT
R44
0
800776-001 NOT INSTALLED
U24
DG408
800776-002 NOT INSTALLED
U23
DG408
U25
DG408
MUX_SEL5
MUX_SEL4
MUX_SEL3
+ANA_CHECK
NEG_PULSES
NBP_PULSES
PRESSURE
TEMP
MUX_SEL2
MUX_SEL1
MUX_SEL0
BP2_ID
BP1_ID
BP2
BP1
CAR_LEVEL
RESP
+2.5VREF
ISOAGND
+5BISO
POX_PINT
POX
POX_PREAC
A/D_IR
A/D_RED
-ANA_CHECK
POX_SUM
BIAS_V
BIAS_LL
BIAS_LA
BIAS_RA
LEAD_V
LEAD_III
LEAD_II
LEAD_I

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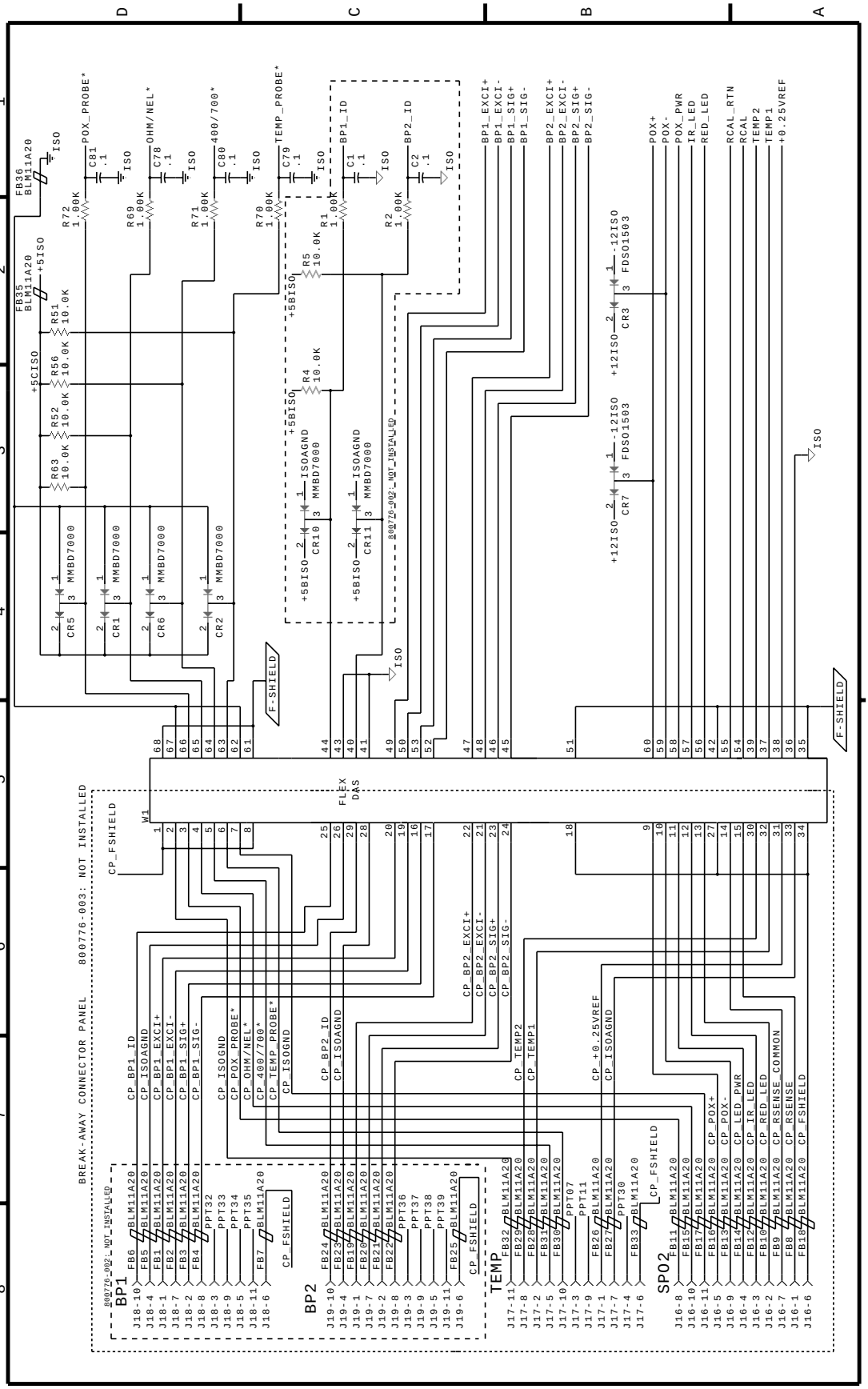
BREAK-AWAY CONNECTOR PANEL 800776-003: NOT INSTALLED
800776-002: NOT INSTALLED
BP1
BP2
TEMP
SPO2
FLEX DAS
W1
CP_FSHIELD
CP_BP1_ID
CP_ISOAGND
CP_BP1_EXCI+
CP_BP1_EXCI-
CP_BP1_SIG+
CP_BP1_SIG-
CP_ISOGND
CP_POX_PROBE*
CP_OHM/NEL*
CP_400/700*
CP_TEMP_PROBE*
CP_BP2_ID
CP_BP2_EXCI+
CP_BP2_EXCI-
CP_BP2_SIG+
CP_BP2_SIG-
CP_TEMP2
CP_TEMP1
CP_+0.25VREF
CP_POX+
CP_POX-
CP_LED_PWR
CP_IR_LED
CP_RED_LED
CP_RSENSE_COMMON
CP_RSENSE
POX_PROBE*
OHM/NEL*
400/700*
TEMP_PROBE*
BP1_ID
BP2_ID
+5ISO
+5CISO
+5BISO
+12ISO
ISOAGND
MMBD7000
F-SHIELD
ISO
POX+
POX-
POX_PWR
IR_LED
RED_LED
RCAL_RTN
RCAL
TEMP2
TEMP1
+0.25VREF

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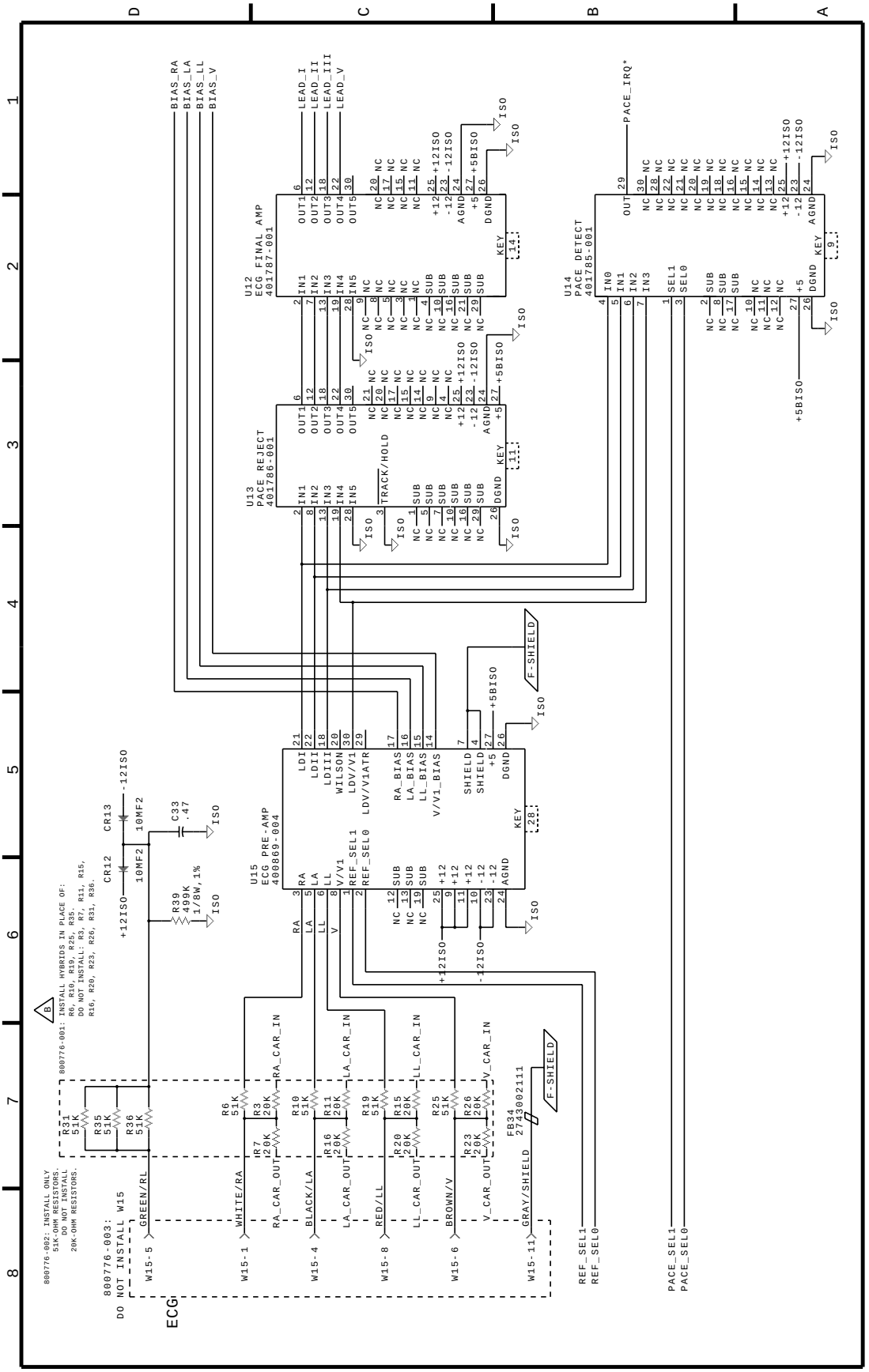
D
C
B
A
1
2
3
4
5
6
7
8
U12
ECG FINAL AMP
401787-001
U13
PACE REJECT
401786-001
U14
PACE DETECT
401785-001
U15
ECG PRE-AMP
400869-004
BIAS_RA
BIAS_LA
BIAS_LL
BIAS_V
LEAD_I
LEAD_II
LEAD_III
LEAD_V
PACE_IRQ*
F-SHIELD
ISO
+12ISO
-12ISO
+5BISO
REF_SEL1
REF_SEL0
PACE_SEL1
PACE_SEL0
ECG
800776-003: DO NOT INSTALL W15
800776-002: INSTALL ONLY 51K-OHM RESISTORS. DO NOT INSTALL 20K OHM RESISTORS.
800776-001: INSTALL HYBRIDS IN PLACE OF: R6, R10, R19, R25, R35. DO NOT INSTALL: R3, R7, R11, R15, R16, R20, R23, R26, R31, R36.
R39 49.9K 1/8W,1%
C33 .47
CR12
CR13
10MF2
R31 51K
R35 51K
R36 51K
R6 51K
R10 51K
R19 51K
R25 51K
R35 51K
R3 20K
R7 20K
R11 20K
R15 20K
R16 20K
R20 20K
R23 20K
R26 20K
FB34 2743002111
W15-5 GREEN/RL
W15-1 WHITE/RA
W15-4 BLACK/LA
W15-8 RED/LL
W15-6 BROWN/V
W15-11 GRAY/SHIELD
RA_CAR_IN
LA_CAR_IN
LL_CAR_IN
V_CAR_IN
RA_CAR_OUT
LA_CAR_OUT
LL_CAR_OUT
V_CAR_OUT

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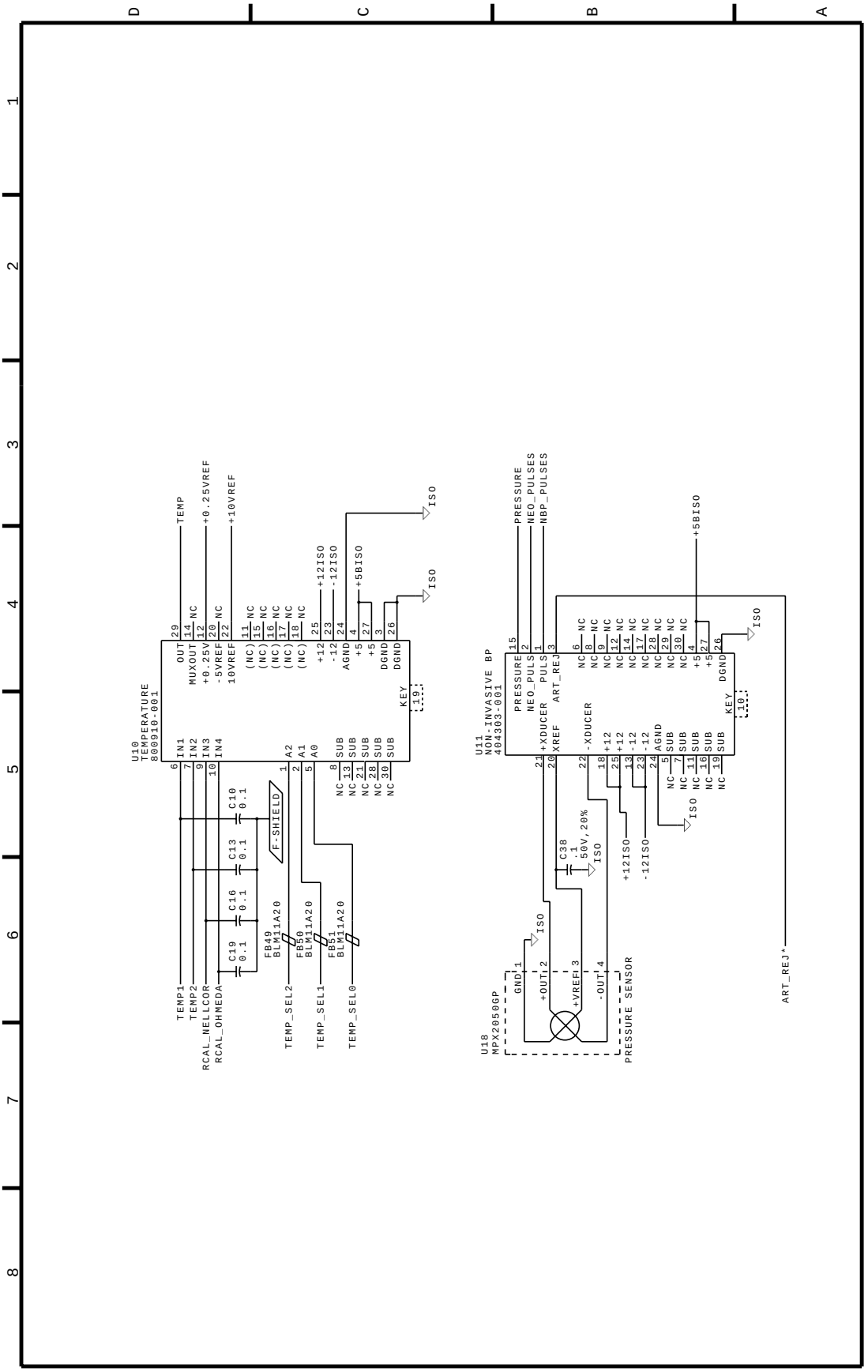
D
C
B
A
1
2
3
4
5
6
7
8
U10
TEMPERATURE
800910-001
TEMP
+0.25VREF
+10VREF
+12ISO
-12ISO
+5BISO
ISO
ISO
TEMP1
TEMP2
RCAL_NELLCOR
RCAL_OHMEDA
TEMP_SEL2
TEMP_SEL1
TEMP_SEL0
C10 0.1
C13 0.1
C16 0.1
C19 0.1
F-SHIELD
FB49 BLM11A20
FB50 BLM11A20
FB51 BLM11A20
U11
NON-INVASIVE BP
404303-001
PRESSURE
NEO_PULSES
NBP_PULSES
ART_REJ*
U18
MPX2050GP
C38 .1 50V, 20%
+12ISO
-12ISO
PRESSURE SENSOR

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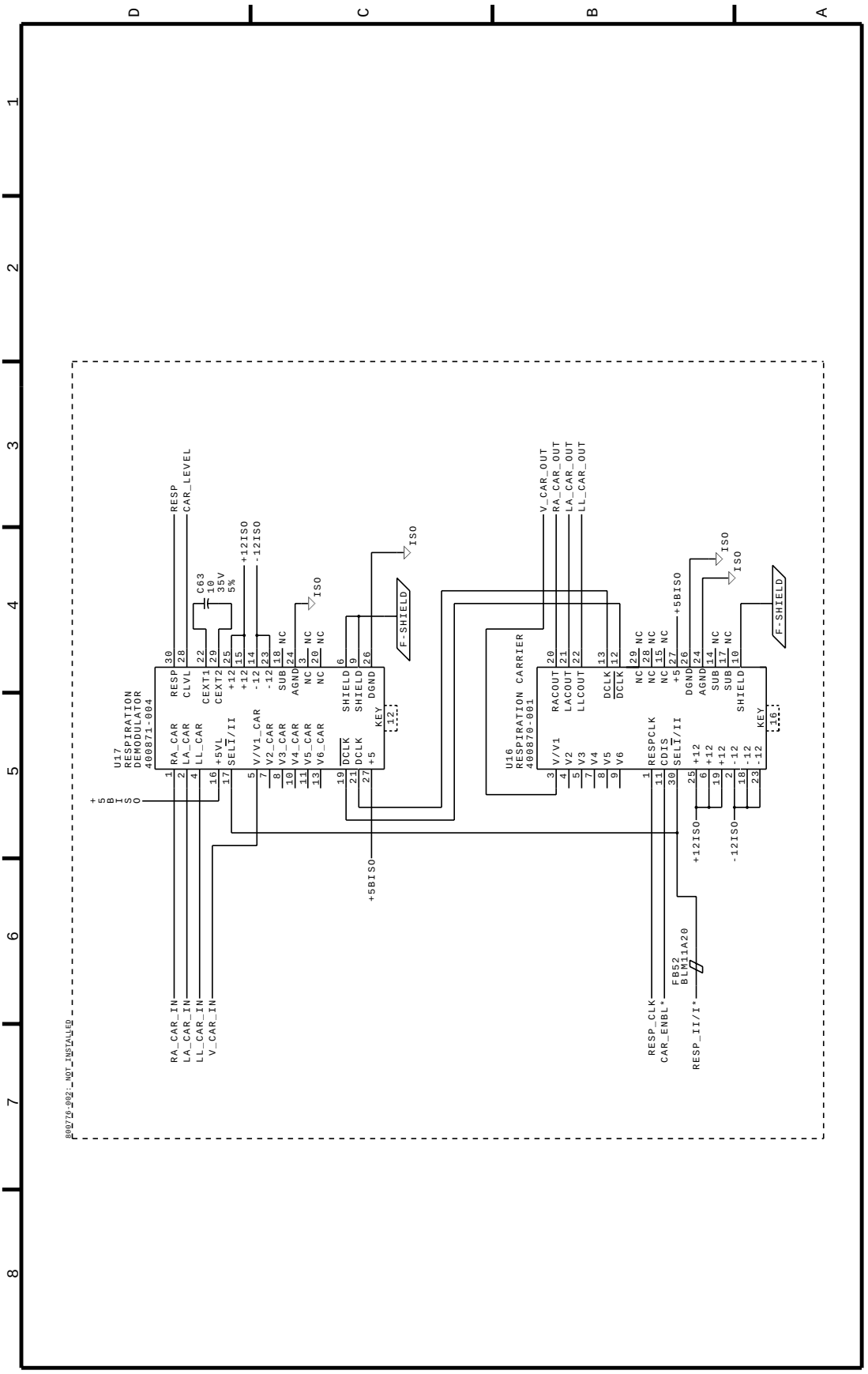
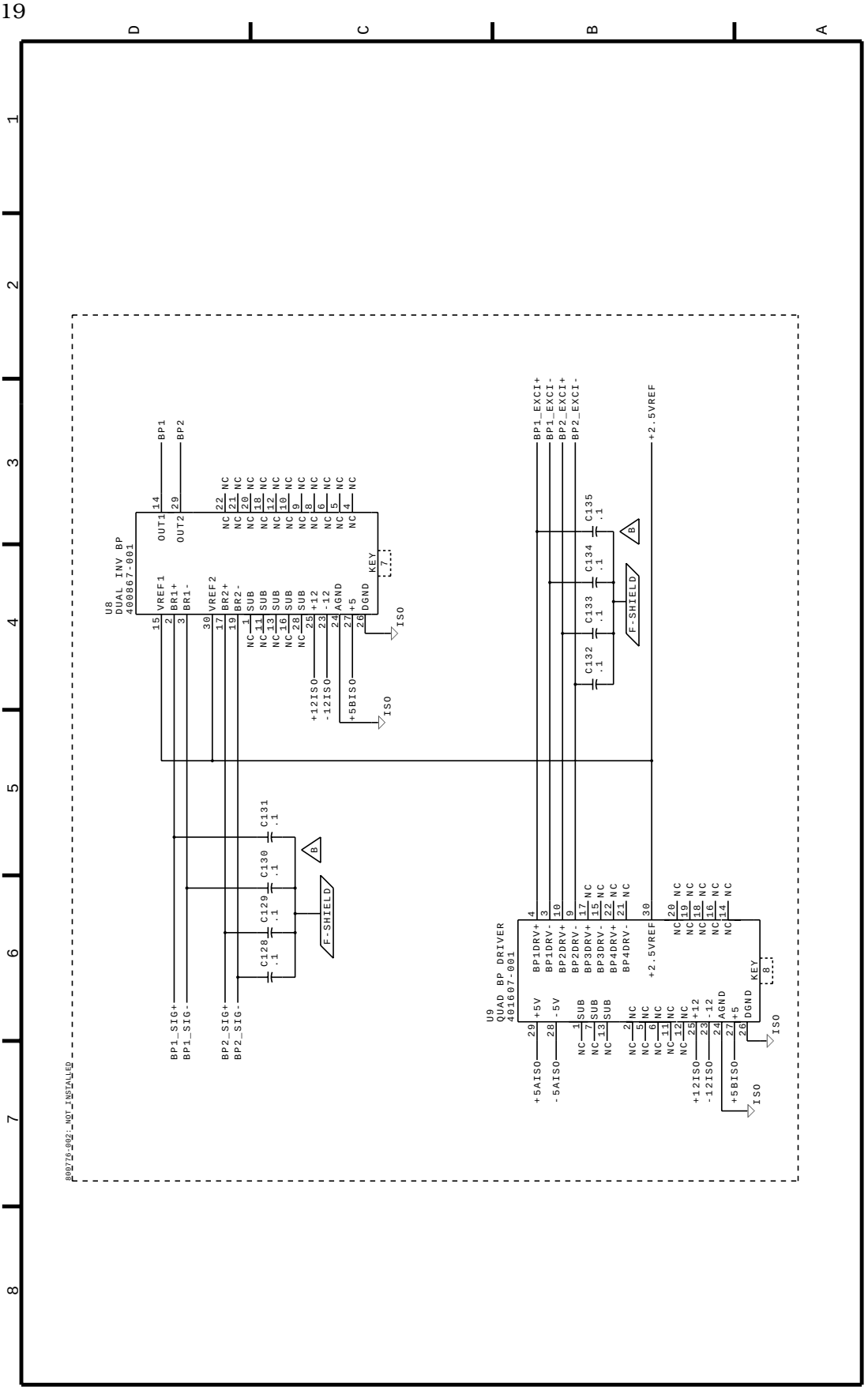

U17
RESPIRATION
DEMODULATOR
400871-004
RA_CAR
LA_CAR
LL_CAR
+5VL
SELT/II
V/V1_CAR
V2_CAR
V3_CAR
V4_CAR
V5_CAR
V6_CAR
RESP
CLVL
CEXT1
CEXT2
+12
-12
SUB
AGND
NC
SHIELD
DCLK
DGND
KEY
C63
10
35V
5%
+12ISO
-12ISO
ISO
F-SHIELD
+5BISO
U16
RESPIRATION CARRIER
400870-001
V/V1
V2
V3
V4
V5
V6
RACOUT
LACOUT
LLCOUT
V_CAR_OUT
RA_CAR_OUT
LA_CAR_OUT
LL_CAR_OUT
RESPCLK
CDIS
+5
DGND
AGND
RESP_CLK
CAR_ENBL*
RESP_II/I*
FB52
BLM11A20
+5BISO


U8
DUAL INV BP
400867-001
U9
QUAD BP DRIVER
401607-001
BP1
BP2
VREF1
BR1+
BR1-
VREF2
BR2+
BR2-
OUT1
OUT2
DGND
KEY
+12ISO
-12ISO
+5BISO
ISO
AGND
+5
+12
-12
SUB
NC
BP1_SIG+
BP1_SIG-
BP2_SIG+
BP2_SIG-
BP1_EXCI+
BP1_EXCI-
BP2_EXCI+
BP2_EXCI-
+2.5VREF
C128 .1
C129 .1
C130 .1
C131 .1
C132 .1
C133 .1
C134 .1
C135 .1
F-SHIELD
B
+5AISO
-5AISO
+5V
-5V
BP1DRV+
BP1DRV-
BP2DRV+
BP2DRV-
BP3DRV+
BP3DRV-
BP4DRV+
BP4DRV-

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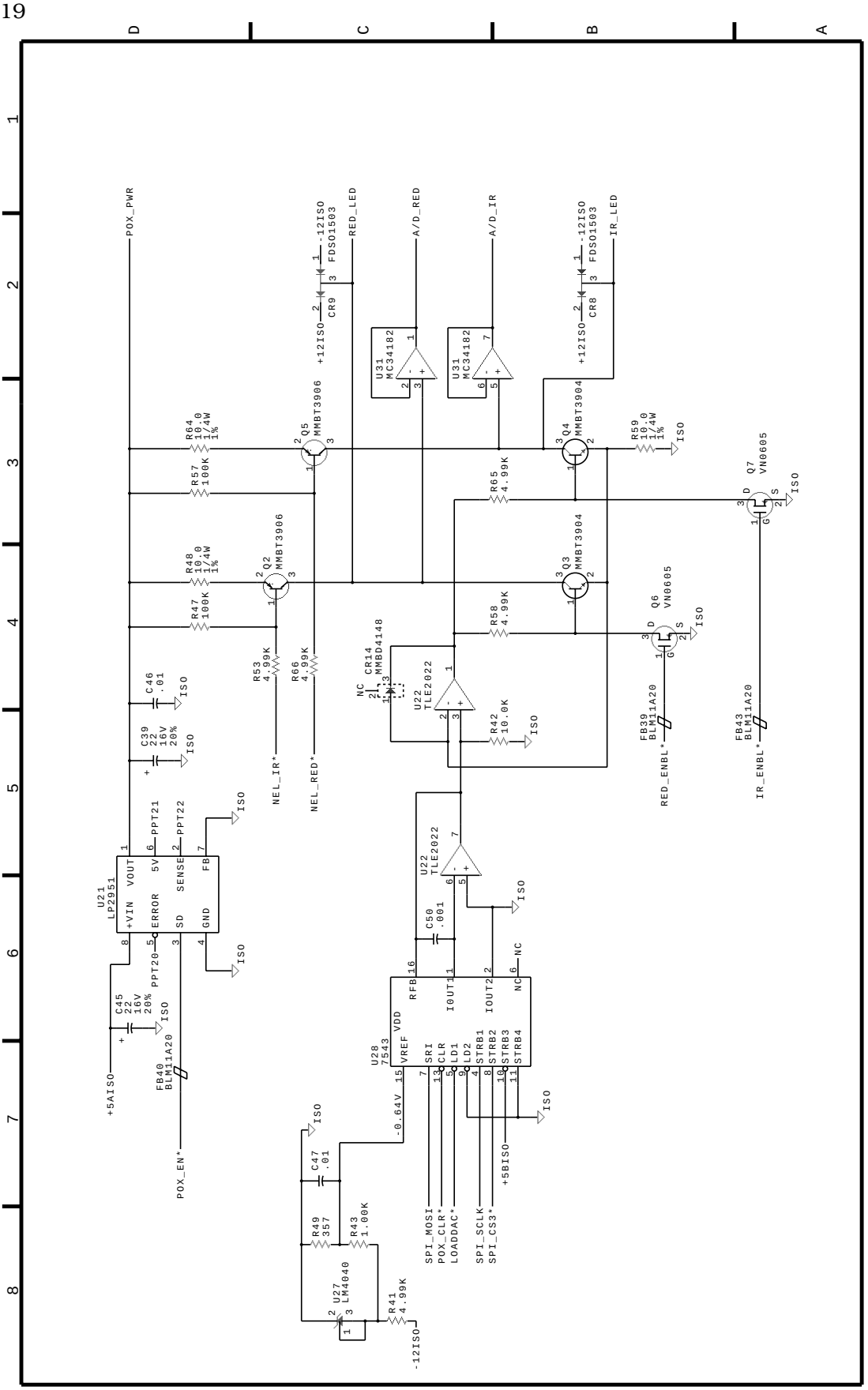
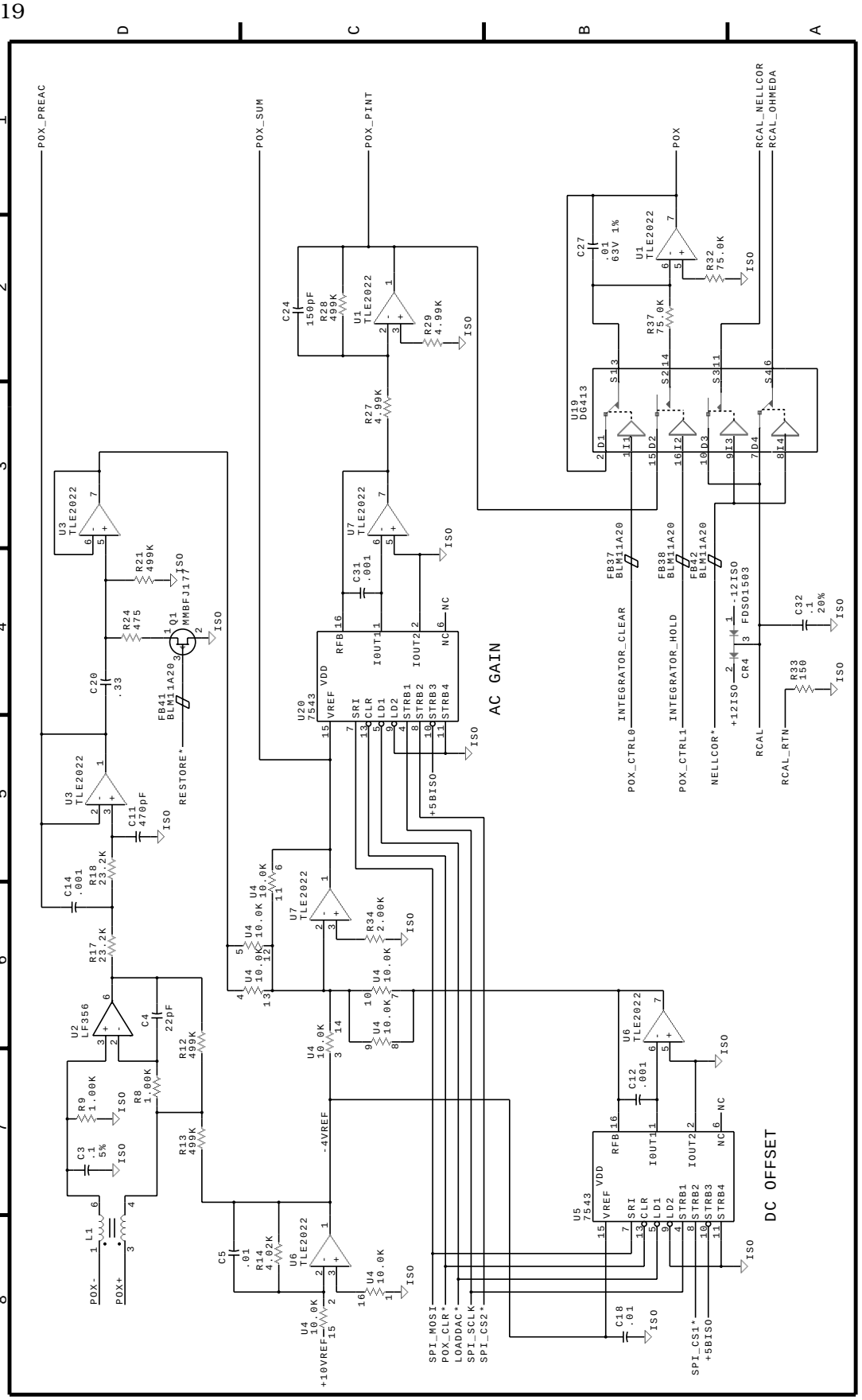

POX_PWR
RED_LED
IR_LED
A/D_RED
A/D_IR
+12ISO
-12ISO
ISO
U31 MC34182
Q5 MMBT3906
Q2 MMBT3906
Q4 MMBT3904
Q3 MMBT3904
Q7 VN0605
Q6 VN0605
R64 10.0 1/4W 1%
R57 100K
R48 10.0 1/4W 1%
R47 100K
R59 10.0 1/4W 1%
R65 4.99K
R58 4.99K
R53 4.99K
R66 4.99K
R42 10.0K
CR14 MMBD4148
U22 TLE2022
C46 .01
C39 22 16V 20%
C45 22 16V 20%
C50 .001
C47 .01
U21 LP2951
U28 7543
U27 LM4040
R49 357
R43 1.00K
R41 4.99K
FB40 BLM11A20
FB39 BLM11A20
FB43 BLM11A20
+5AISO
+5BISO
POX_EN*
NEL_IR*
NEL_RED*
RED_ENBL*
IR_ENBL*
SPI_MOSI
POX_CLR*
LOADDAC*
SPI_SCLK
SPI_CS3*
-0.64V


AC GAIN
DC OFFSET
POX_PREAC
POX_SUM
POX_PINT
POX
RCAL_NELLCOR
RCAL_OHMEDA
INTEGRATOR_CLEAR
INTEGRATOR_HOLD
POX_CTRL0
POX_CTRL1
NELLCOR*
RCAL
RCAL_RTN
RESTORE*
+12ISO
-12ISO
+5BISO
-4VREF
+10VREF
POX-
POX+
SPI_MOSI
POX_CLR*
LOADDAC*
SPI_SCLK
SPI_CS2*
SPI_CS1*
ISO

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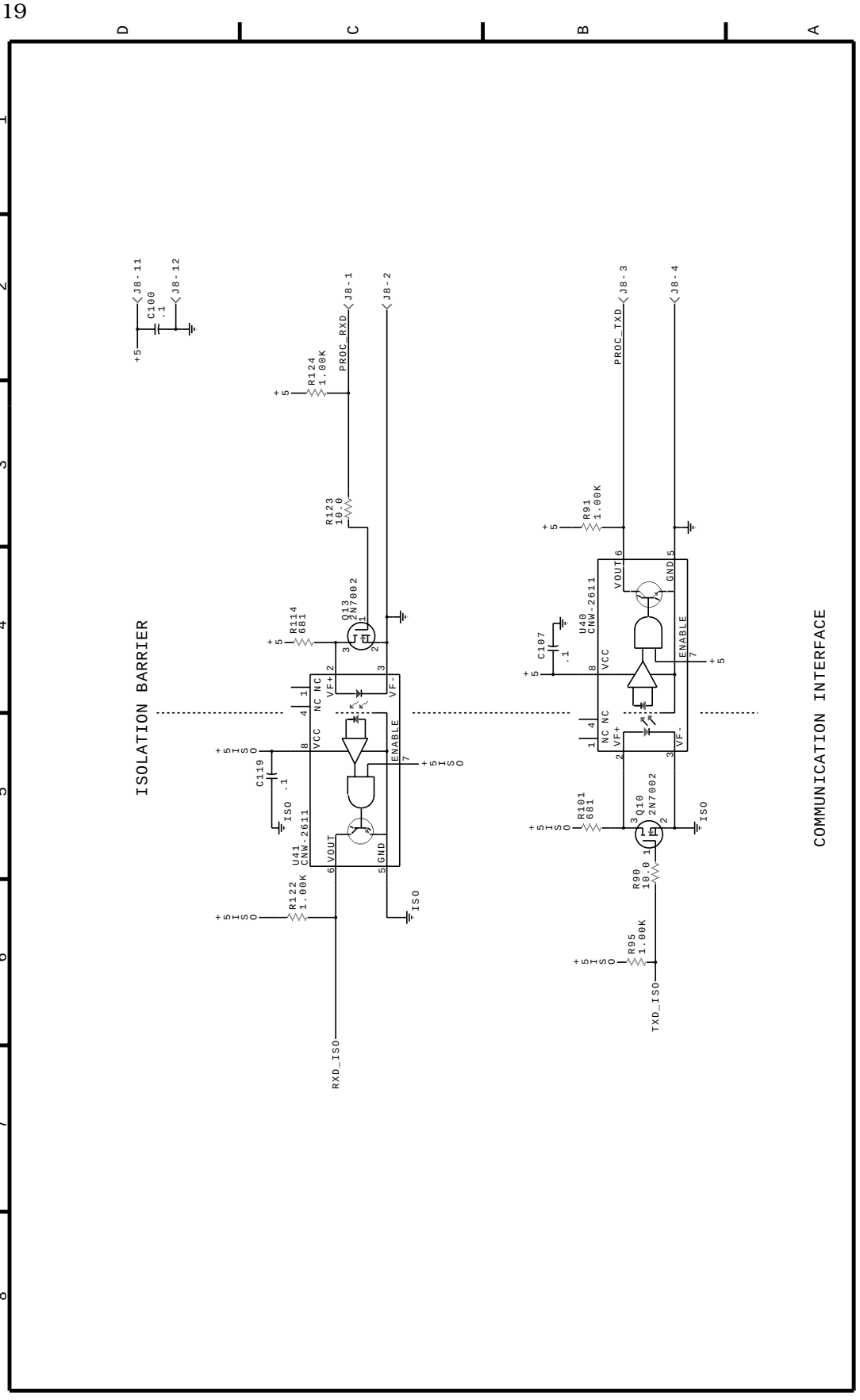
ISOLATION BARRIER
COMMUNICATION INTERFACE
J8-11
C100 .1
J8-12
J8-1
PROC_RXD
J8-2
R124 1.00K
R123 10.0
R114 681
Q13 2N7002
U41 CNW-2611
C119 .1
R122 1.00K
RXD_ISO
J8-3
PROC_TXD
J8-4
R91 1.00K
C107 .1
U40 CNW-2611
R101 681
Q10 2N7002
R90 10.0
R95 1.00K
TXD_ISO
VCC
NC
VF+
VF-
VOUT
GND
ENABLE
ISO

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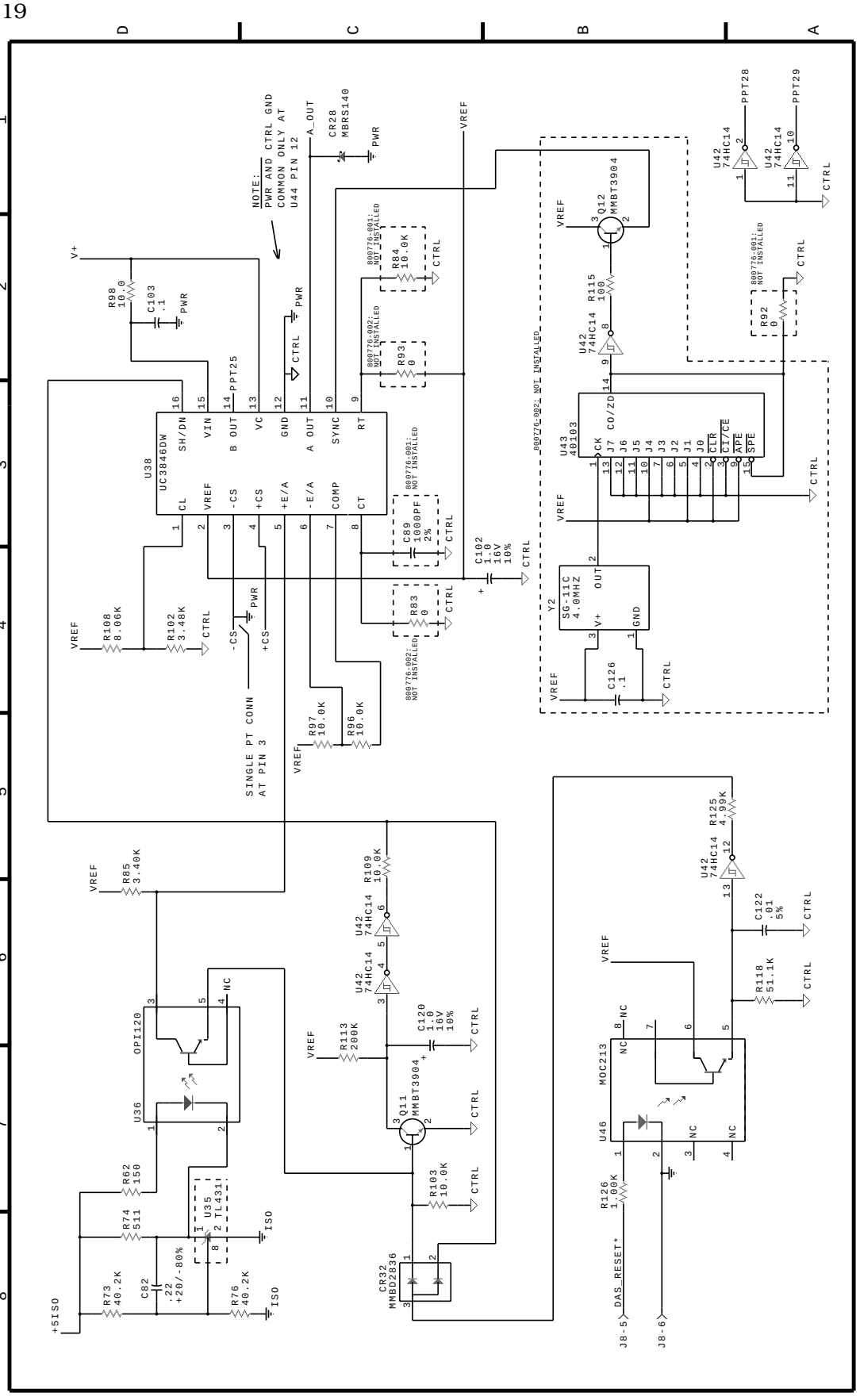
NOTE: PWR AND CTRL GND COMMON ONLY AT U44 PIN 12
SINGLE PT CONN AT PIN 3
800776-001: NOT INSTALLED
800776-002: NOT INSTALLED
U38 UC3846DW
U43 40103
U42 74HC14
U36 OPI120
U46 MOC213
U35 TL431
Y2 SG-11C 4.0MHZ
Q11 MMBT3904
Q12 MMBT3904
CR28 MBRS140
CR32 MMBD2836
VREF
CTRL
PWR
ISO
+5ISO
DAS_RESET*
J8-5
J8-6

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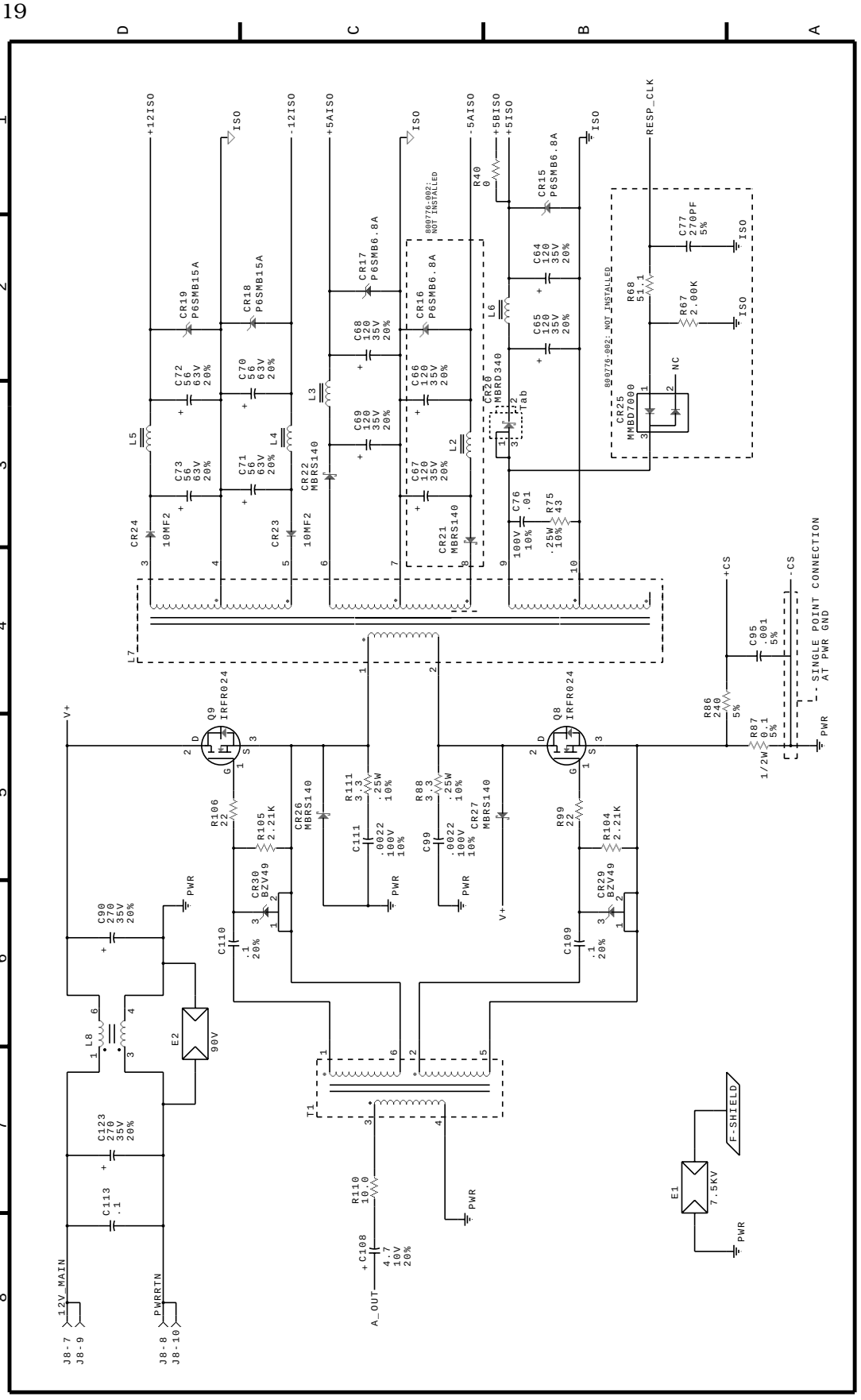
+12ISO
-12ISO
+5AISO
-5AISO
+5BISO
+5ISO
ISO
RESP_CLK
+CS
-CS
V+
PWR
12V_MAIN
PWRRTN
A_OUT
F-SHIELD
800776-002: NOT INSTALLED
* SINGLE POINT CONNECTION AT PWR GND
CR19 P6SMB15A
CR18 P6SMB15A
CR17 P6SMB6.8A
CR16 P6SMB6.8A
CR15 P6SMB6.8A
CR20 MBRD340
CR21 MBRS140
CR22 MBRS140
CR23 10MF2
CR24 10MF2
CR25 MMBD7000
CR26 MBRS140
CR27 MBRS140
CR29 BZV49
CR30 BZV49
Q8 IRFR024
Q9 IRFR024
T1
L2
L3
L4
L5
L6
L7
L8
E1 7.5KV
E2 90V
R40 0
R67 2.00K
R68 511
R75 43
R86 240 5%
R87 0.1 5% 1/2W
R88 3.3 .25W 10%
R99 22
R104 2.21K
R105 2.21K
R106 22
R110 10.0
R111 3.3 .25W 10%
C64 120 35V 20%
C65 120 35V 20%
C66 120 35V 20%
C67 120 35V 20%
C68 120 35V 20%
C69 120 35V 20%
C70 56 63V 20%
C71 56 63V 20%
C72 56 63V 20%
C73 56 63V 20%
C76 .01 100V 10%
C77 270PF 5%
C90 270 35V 20%
C95 .001 5%
C99 .0022 100V 10%
C108 4.7 16V 20%
C109 .1 20%
C110 .1 20%
C111 .0022 100V 10%
C113 .1
C123 270 35V 20%
J8-7
J8-9
J8-8
J8-10

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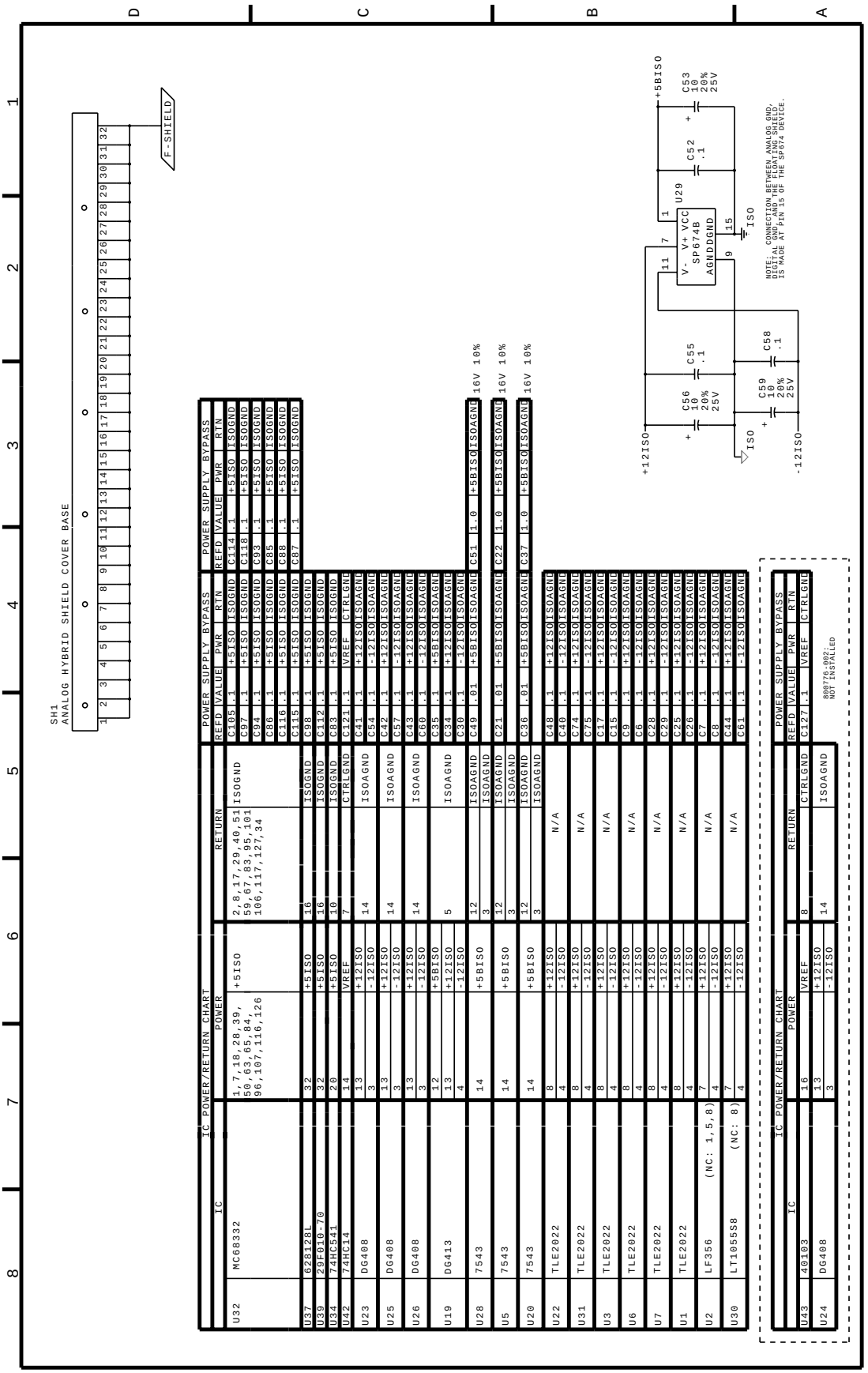
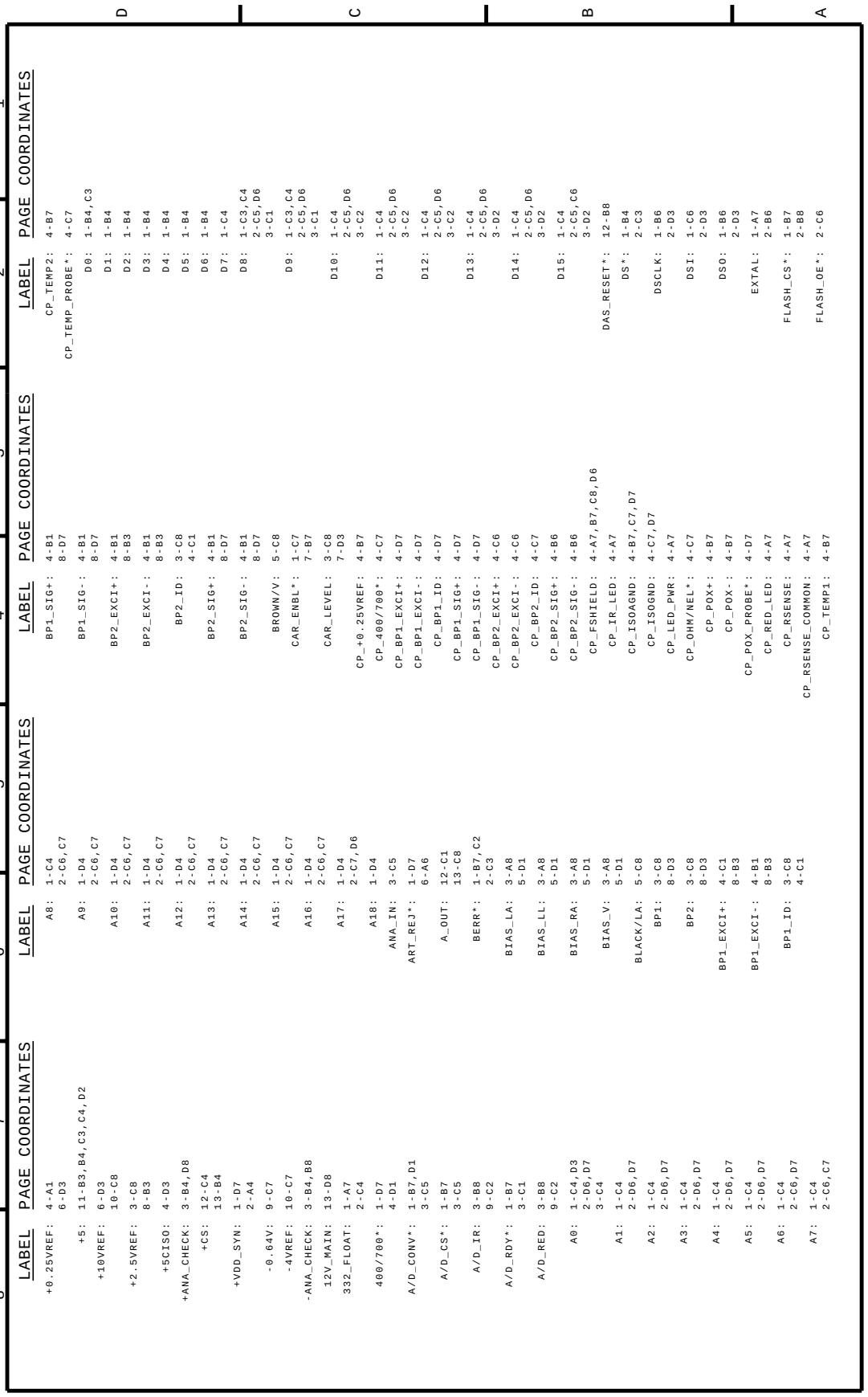
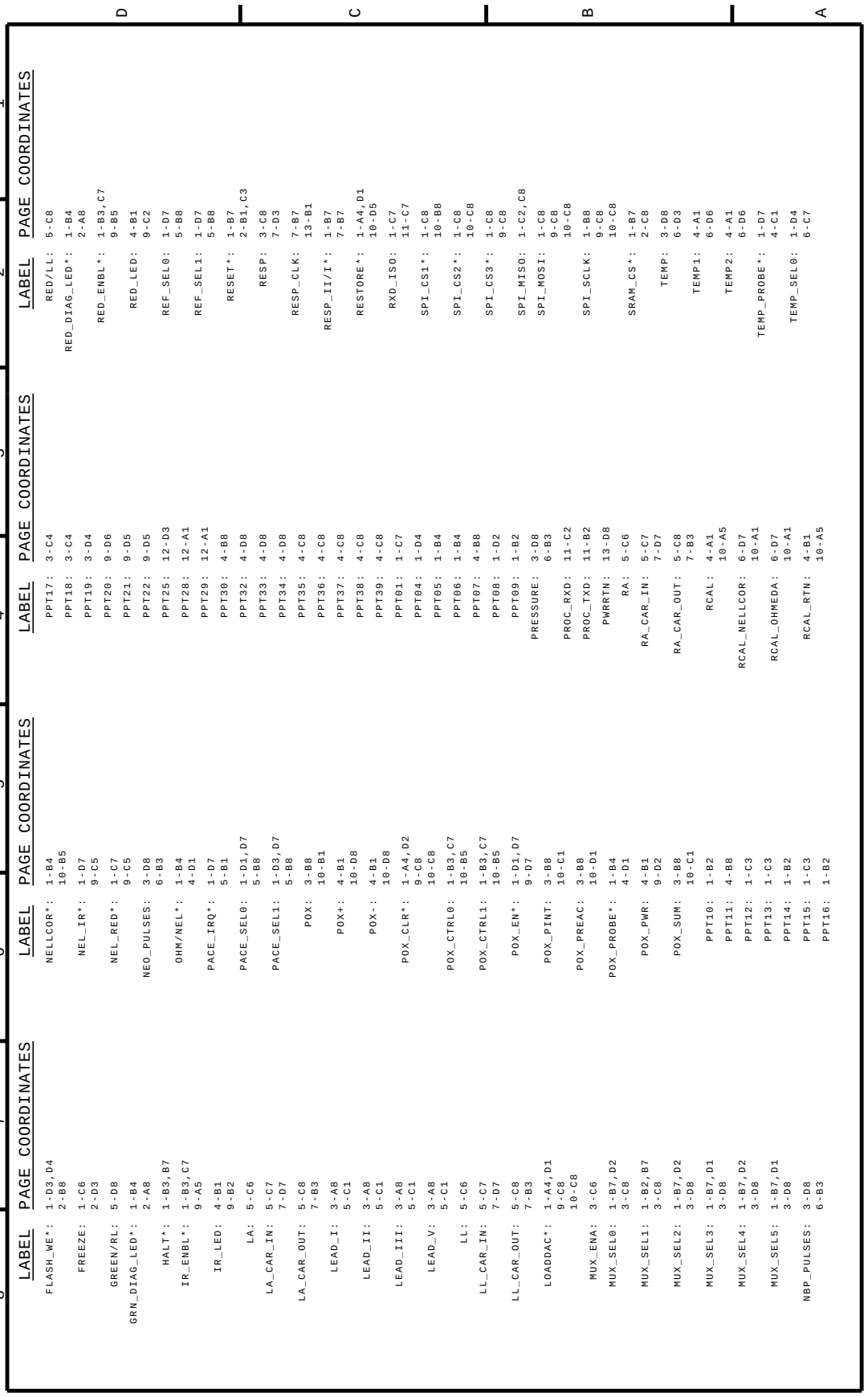

SH1
ANALOG HYBRID SHIELD COVER BASE
F-SHIELD
IC POWER/RETURN CHART
IC
POWER
RETURN
POWER SUPPLY BYPASS
REFD VALUE PWR RTN
U32 MC68332 1,7,18,28,39,50,63,65,84,96,107,116,126 +5ISO 2,8,17,29,40,51,59,67,83,95,101,106,117,127,34 ISOGND C105 .1 +5ISO ISOGND C114 .1 +5ISO ISOGND
C97 .1 +5ISO ISOGND C118 .1 +5ISO ISOGND
C94 .1 +5ISO ISOGND C93 .1 +5ISO ISOGND
C86 .1 +5ISO ISOGND C85 .1 +5ISO ISOGND
C116 .1 +5ISO ISOGND C88 .1 +5ISO ISOGND
C115 .1 +5ISO ISOGND C87 .1 +5ISO ISOGND
U37 628128L 32 +5ISO 16 ISOGND C98 .1 +5ISO ISOGND
U39 29F010-70 32 +5ISO 16 ISOGND C112 .1 +5ISO ISOGND
U34 74HC541 20 +5ISO 10 ISOGND C83 .1 +5ISO ISOGND
U42 74HC14 14 VREF 7 CTRLGND C121 .1 VREF CTRLGND
U23 DG408 13 +12ISO 14 ISOAGND C41 .1 +12ISO ISOAGND
3 -12ISO C54 .1 -12ISO ISOAGND
U25 DG408 13 +12ISO 14 ISOAGND C42 .1 +12ISO ISOAGND
3 -12ISO C57 .1 -12ISO ISOAGND
U26 DG408 13 +12ISO 14 ISOAGND C43 .1 +12ISO ISOAGND
3 -12ISO C60 .1 -12ISO ISOAGND
U19 DG413 12 +5BISO 5 ISOAGND C35 .1 +5BISO ISOAGND
13 +12ISO C34 .1 +12ISO ISOAGND
4 -12ISO C30 .1 -12ISO ISOAGND
U28 7543 14 +5BISO 12 ISOAGND C49 .01 +5BISO ISOAGND C51 1.0 16V 10% +5BISO ISOAGND
U5 7543 14 +5BISO 12 ISOAGND C21 .01 +5BISO ISOAGND C22 1.0 16V 10% +5BISO ISOAGND
3 ISOAGND
U20 7543 14 +5BISO 12 ISOAGND C36 .01 +5BISO ISOAGND C37 1.0 16V 10% +5BISO ISOAGND
3 ISOAGND
U22 TLE2022 8 +12ISO N/A C48 .1 +12ISO ISOAGND
4 -12ISO C40 .1 -12ISO ISOAGND
U31 TLE2022 8 +12ISO N/A C74 .1 +12ISO ISOAGND
4 -12ISO C75 .1 -12ISO ISOAGND
U3 TLE2022 8 +12ISO N/A C17 .1 +12ISO ISOAGND
4 -12ISO C15 .1 -12ISO ISOAGND
U6 TLE2022 8 +12ISO N/A C9 .1 +12ISO ISOAGND
4 -12ISO C6 .1 -12ISO ISOAGND
U7 TLE2022 8 +12ISO N/A C28 .1 +12ISO ISOAGND
4 -12ISO C29 .1 -12ISO ISOAGND
U1 TLE2022 8 +12ISO N/A C25 .1 +12ISO ISOAGND
4 -12ISO C26 .1 -12ISO ISOAGND
U2 LF356 (NC: 1,5,8) 7 +12ISO N/A C7 .1 +12ISO ISOAGND
4 -12ISO C8 .1 -12ISO ISOAGND
U30 LT1055S8 (NC: 8) 7 +12ISO N/A C44 .1 +12ISO ISOAGND
4 -12ISO C61 .1 -12ISO ISOAGND
IC POWER/RETURN CHART
IC
POWER
RETURN
POWER SUPPLY BYPASS
REFD VALUE PWR RTN
U43 40103 16 VREF 8 CTRLGND C127 .1 VREF CTRLGND
U24 DG408 13 +12ISO 14 ISOAGND
3 -12ISO
880776-002:
NOT INSTALLED
+12ISO
-12ISO
ISO
+5BISO
U29
SP674B
V- V+ VCC
AGNDDGND
C56 10 20% 25V
C55 .1
C58 .1
C59 10 20% 25V
C52 .1
C53 10 20% 25V
NOTE: CONNECTION BETWEEN ANALOG GND, DIGITAL GND, AND THE FLOATING SHIELD IS MADE AT PIN 15 OF THE SP674 DEVICE.



LABEL	PAGE COORDINATES
+0.25VREF:	4-A1
	6-D3
+5:	11-B3,B4,C3,C4,D2
+10VREF:	6-D3
	10-C8
+2.5VREF:	3-C8
	8-B3
+5CISO:	4-D3
+ANA_CHECK:	3-B4,D8
+CS:	12-C4
	13-B4
+VDD_SYN:	1-D7
	2-A4
-0.64V:	9-C7
-4VREF:	10-C7
-ANA_CHECK:	3-B4,B8
12V_MAIN:	13-D8
332_FLOAT:	1-A7
	2-C4
400/700*:	1-D7
	4-D1
A/D_CONV*:	1-B7,D1
	3-C5
A/D_CS*:	1-B7
	3-C5
A/D_IR:	3-B8
	9-C2
A/D_RDY*:	1-B7
	3-C1
A/D_RED:	3-B8
	9-C2
A0:	1-C4,D3
	2-D6,D7
	3-C4
A1:	1-C4
	2-D6,D7
A2:	1-C4
	2-D6,D7
A3:	1-C4
	2-D6,D7
A4:	1-C4
	2-D6,D7
A5:	1-C4
	2-D6,D7
A6:	1-C4
	2-C6,D7
A7:	1-C4
	2-C6,C7
A8:	1-C4
	2-C6,C7
A9:	1-D4
	2-C6,C7
A10:	1-D4
	2-C6,C7
A11:	1-D4
	2-C6,C7
A12:	1-D4
	2-C6,C7
A13:	1-D4
	2-C6,C7
A14:	1-D4
	2-C6,C7
A15:	1-D4
	2-C6,C7
A16:	1-D4
	2-C6,C7
A17:	1-D4
	2-C7,D6
A18:	1-D4
ANA_IN:	3-C5
ART_REJ*:	1-D7
	6-A6
A_OUT:	12-C1
	13-C8
BERR*:	1-B7,C2
	2-C3
BIAS_LA:	3-A8
	5-D1
BIAS_LL:	3-A8
	5-D1
BIAS_RA:	3-A8
	5-D1
BIAS_V:	3-A8
	5-D1
BLACK/LA:	5-C8
BP1:	3-C8
	8-D3
BP2:	3-C8
	8-D3
BP1_EXCI+:	4-C1
	8-B3
BP1_EXCI-:	4-B1
	8-B3
BP1_ID:	3-C8
	4-C1
BP1_SIG+:	4-B1
	8-D7
BP1_SIG-:	4-B1
	8-D7
BP2_EXCI+:	4-B1
	8-B3
BP2_EXCI-:	4-B1
	8-B3
BP2_ID:	3-C8
	4-C1
BP2_SIG+:	4-B1
	8-D7
BP2_SIG-:	4-B1
	8-D7
BROWN/V:	5-C8
CAR_ENBL*:	1-C7
	7-B7
CAR_LEVEL:	3-C8
	7-D3
CP_+0.25VREF:	4-B7
CP_400/700*:	4-C7
CP_BP1_EXCI+:	4-D7
CP_BP1_EXCI-:	4-D7
CP_BP1_ID:	4-D7
CP_BP1_SIG+:	4-D7
CP_BP1_SIG-:	4-D7
CP_BP2_EXCI+:	4-C6
CP_BP2_EXCI-:	4-C6
CP_BP2_ID:	4-C7
CP_BP2_SIG+:	4-B6
CP_BP2_SIG-:	4-B6
CP_FSHIELD:	4-A7,B7,C8,D6
CP_IR_LED:	4-A7
CP_ISOAGND:	4-B7,C7,D7
CP_ISOGND:	4-C7,D7
CP_LED_PWR:	4-A7
CP_OHM/MEL*:	4-C7
CP_POX+:	4-B7
CP_POX-:	4-B7
CP_POX_PROBE*:	4-D7
CP_RED_LED:	4-A7
CP_RSENSE:	4-A7
CP_RSENSE_COMMON:	4-A7
CP_TEMP1:	4-B7
CP_TEMP2:	4-B7
CP_TEMP_PROBE*:	4-C7
D0:	1-B4,C3
D1:	1-B4
D2:	1-B4
D3:	1-B4
D4:	1-B4
D5:	1-B4
D6:	1-B4
D7:	1-C4
D8:	1-C3,C4
	2-C5,D6
	3-C1
D9:	1-C3,C4
	2-C5,D6
	3-C1
D10:	1-C4
	2-C5,D6
	3-C2
D11:	1-C4
	2-C5,D6
	3-C2
D12:	1-C4
	2-C5,D6
	3-C2
D13:	1-C4
	2-C5,D6
	3-D2
D14:	1-C4
	2-C5,D6
	3-D2
D15:	1-C4
	2-C5,C6
	3-D2
DAS_RESET*:	12-B8
DS*:	1-B4
	2-C3
DSCLK:	1-B6
	2-D3
DSI:	1-C6
	2-D3
DSO:	1-B6
	2-D3
EXTAL:	1-A7
	2-B6
FLASH_CS*:	1-B7
	2-B8
FLASH_OE*:	2-C6



LABEL	PAGE COORDINATES
FLASH_WE*:	1-D3,D4
	2-B8
FREEZE:	1-C6
	2-D3
GREEN/RL:	5-D8
GRN_DIAG_LED*:	1-B4
	2-A8
HALT*:	1-B3,B7
IR_ENBL*:	1-B3,C7
	9-A5
IR_LED:	4-B1
	9-B2
LA:	5-C6
LA_CAR_IN:	5-C7
	7-D7
LA_CAR_OUT:	5-C8
	7-B3
LEAD_I:	3-A8
	5-C1
LEAD_II:	3-A8
	5-C1
LEAD_III:	3-A8
	5-C1
LEAD_V:	3-A8
	5-C1
LL:	5-C6
LL_CAR_IN:	5-C7
	7-D7
LL_CAR_OUT:	5-C8
	7-B3
LOADDAC*:	1-A4,D1
	9-C8
	10-C8
MUX_ENA:	3-C6
MUX_SEL0:	1-B7,D2
	3-C8
MUX_SEL1:	1-B2,B7
	3-C8
MUX_SEL2:	1-B7,D2
	3-D8
MUX_SEL3:	1-B7,D1
	3-D8
MUX_SEL4:	1-B7,D2
	3-D8
MUX_SEL5:	1-B7,D1
	3-D8
NBP_PULSES:	3-D8
	6-B3
NELLCOR*:	1-B4
	10-B5
NEL_IR*:	1-D7
	9-C5
NEL_RED*:	1-C7
	9-C5
NEO_PULSES:	3-D8
	6-B3
OHM/NEL*:	1-B4
	4-D1
PACE_IRQ*:	1-D7
	5-B1
PACE_SEL0:	1-D1,D7
	5-B8
PACE_SEL1:	1-D3,D7
	5-B8
POX:	3-B8
	10-B1
POX+:	4-B1
	10-D8
POX-:	4-B1
	10-D8
POX_CLR*:	1-A4,D2
	9-C8
	10-C8
POX_CTRL0:	1-B3,C7
	10-B5
POX_CTRL1:	1-B3,C7
	10-B5
POX_EN*:	1-D1,D7
	9-D7
POX_PINT:	3-B8
	10-C1
POX_PREAC:	3-B8
	10-D1
POX_PROBE*:	1-B4
	4-D1
POX_PWR:	4-B1
	9-D2
POX_SUM:	3-B8
	10-C1
PPT10:	1-B2
PPT11:	4-B8
PPT12:	1-C3
PPT13:	1-C3
PPT14:	1-B2
PPT15:	1-C3
PPT16:	1-B2
PPT17:	3-C4
PPT18:	3-C4
PPT19:	3-D4
PPT20:	9-D6
PPT21:	9-D5
PPT22:	9-D5
PPT25:	12-D3
PPT28:	12-A1
PPT29:	12-A1
PPT30:	4-B8
PPT32:	4-D8
PPT33:	4-D8
PPT34:	4-D8
PPT35:	4-C8
PPT36:	4-C8
PPT37:	4-C8
PPT38:	4-C8
PPT39:	4-C8
PPT01:	1-C7
PPT04:	1-D4
PPT05:	1-B4
PPT06:	1-B4
PPT07:	4-B8
PPT08:	1-D2
PPT09:	1-B2
PRESSURE:	3-D8
	6-B3
PROC_RXD:	11-C2
PROC_TXD:	11-B2
PWRRTN:	13-D8
RA:	5-C6
RA_CAR_IN:	5-C7
	7-D7
RA_CAR_OUT:	5-C8
	7-B3
RCAL:	4-A1
	10-A5
RCAL_NELLCOR:	6-D7
	10-A1
RCAL_OHMEDA:	6-D7
	10-A1
RCAL_RTN:	4-B1
	10-A5
RED/LL:	5-C8
RED_DIAG_LED*:	1-B4
	2-A8
RED_ENBL*:	1-B3,C7
	9-B5
RED_LED:	4-B1
	9-C2
REF_SEL0:	1-D7
	5-B8
REF_SEL1:	1-D7
	5-B8
RESET*:	1-B7
	2-B1,C3
RESP:	3-C8
	7-D3
RESP_CLK:	7-B7
	13-B1
RESP_II/I*:	1-B7
	7-B7
RESTORE*:	1-A4,D1
	10-D5
RXD_ISO:	1-C7
	11-C7
SPI_CS1*:	1-C8
	10-B8
SPI_CS2*:	1-C8
	10-C8
SPI_CS3*:	1-C8
	9-C8
SPI_MISO:	1-C2,C8
SPI_MOSI:	1-C8
	9-C8
	10-C8
SPI_SCLK:	1-B8
	9-C8
	10-C8
SRAM_CS*:	1-B7
	2-C8
TEMP:	3-D8
	6-D3
TEMP1:	4-A1
	6-D6
TEMP2:	4-A1
	6-D6
TEMP_PROBE*:	1-D7
	4-C1
TEMP_SEL0:	1-D4
	6-C7

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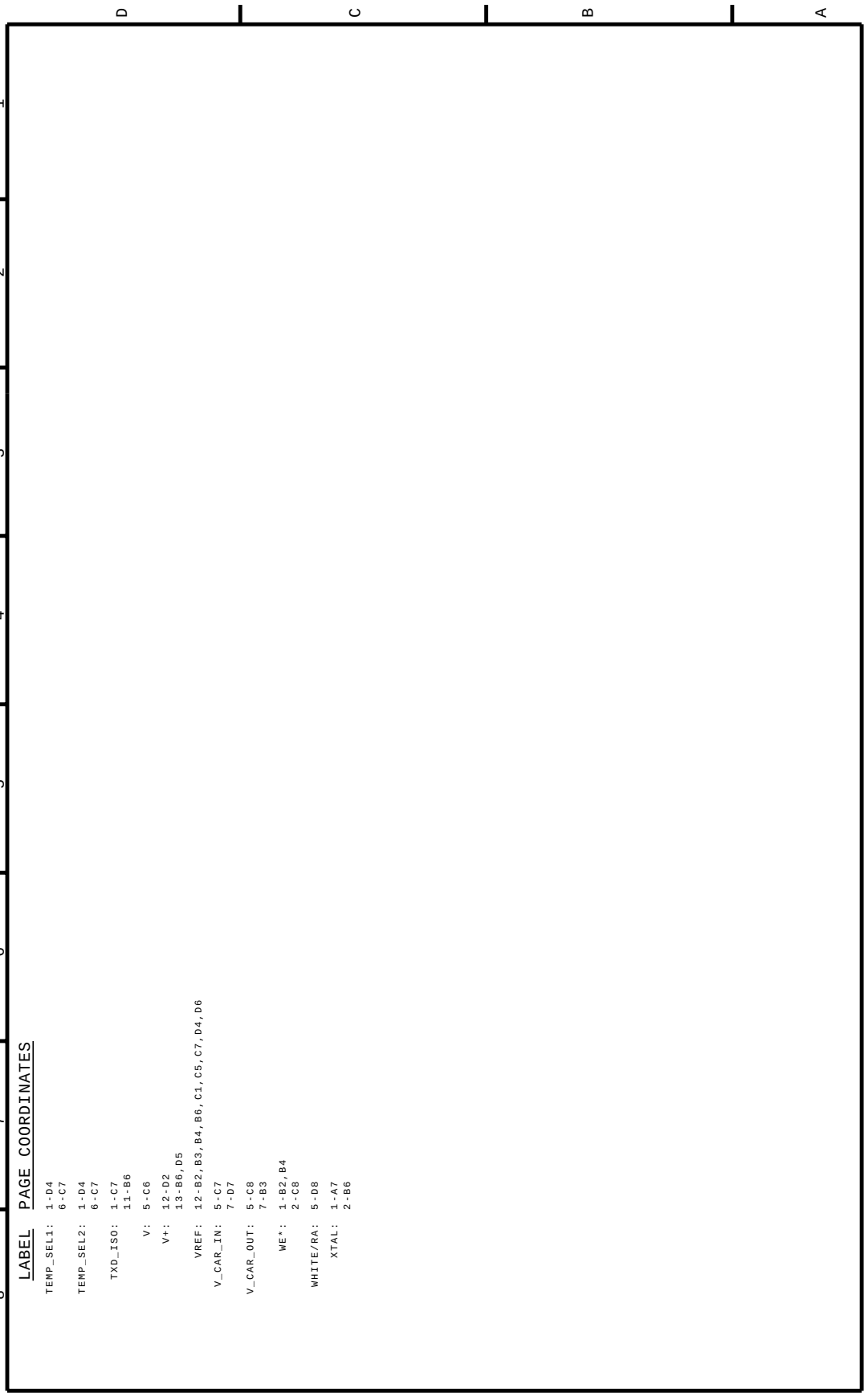
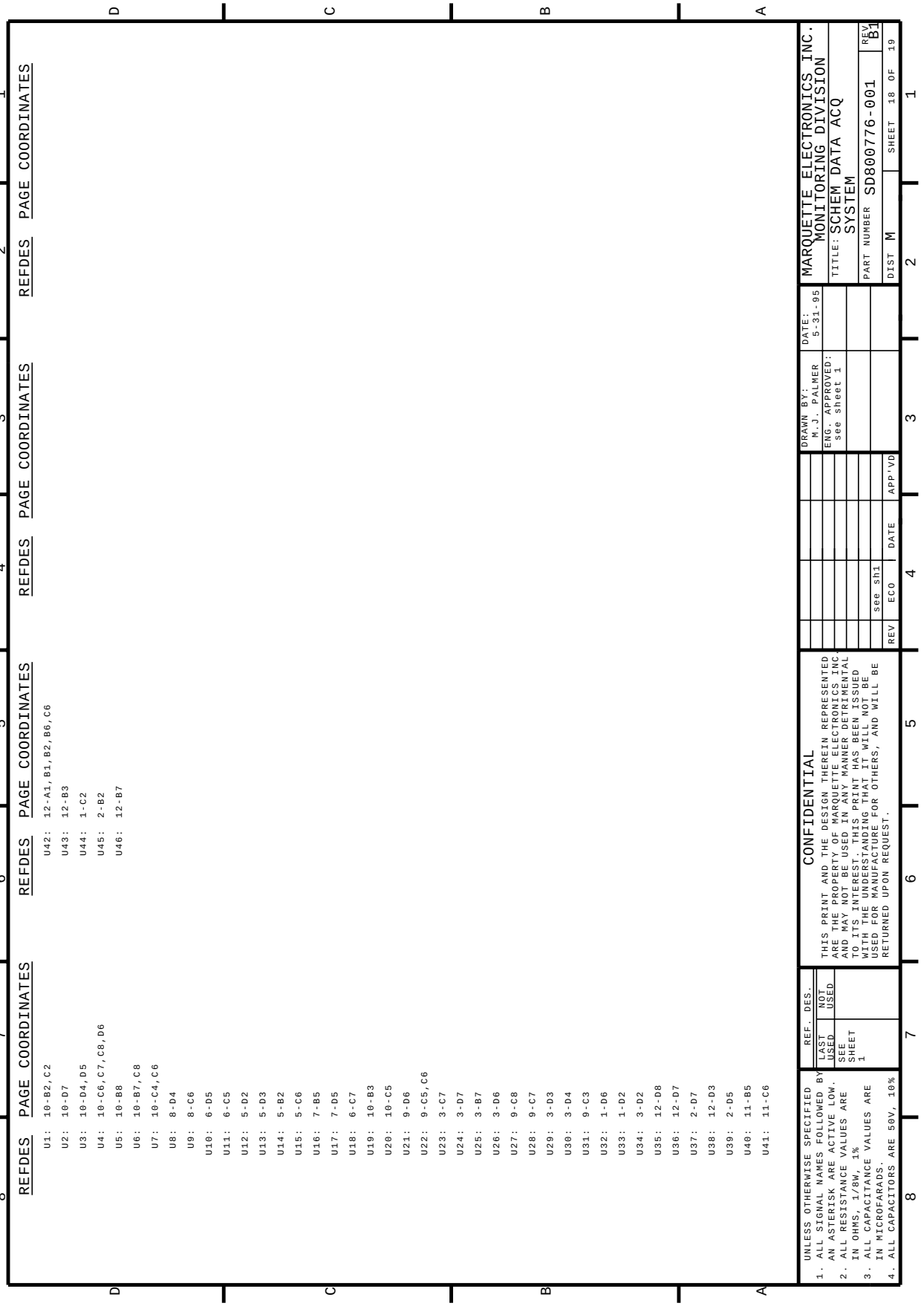

D
C
B
A
1
2
3
4
5
6
7
8
LABEL PAGE COORDINATES
TEMP_SEL1: 1-D4
6-C7
TEMP_SEL2: 1-D4
6-C7
TXD_ISO: 1-C7
11-B6
V: 5-C6
V+: 12-D2
13-B6,D5
VREF: 12-B2,B3,B4,B6,C1,C5,C7,D4,D6
V_CAR_IN: 5-C7
7-D7
V_CAR_OUT: 5-C8
7-B3
WE*: 1-B2,B4
2-C8
WHITE/RA: 5-D8
XTAL: 1-A7
2-B6


REFDES PAGE COORDINATES
U1: 10-B2,C2
U2: 10-D7
U3: 10-D4,D5
U4: 10-C6,C7,C8,D6
U5: 10-B8
U6: 10-B7,C8
U7: 10-C4,C6
U8: 8-D4
U9: 8-C6
U10: 6-D5
U11: 6-C5
U12: 5-D2
U13: 5-D3
U14: 5-B2
U15: 5-C6
U16: 7-B5
U17: 7-D5
U18: 6-C7
U19: 10-B3
U20: 10-C5
U21: 9-D6
U22: 9-C5,C6
U23: 3-C7
U24: 3-D7
U25: 3-B7
U26: 3-D6
U27: 9-C8
U28: 9-C7
U29: 3-D3
U30: 3-D4
U31: 9-C3
U32: 1-D6
U33: 1-D2
U34: 3-D2
U35: 12-D8
U36: 12-D7
U37: 2-D7
U38: 12-D3
U39: 2-D5
U40: 11-B5
U41: 11-C6
U42: 12-A1,B1,B2,B6,C6
U43: 12-B3
U44: 1-C2
U45: 2-B2
U46: 12-B7
UNLESS OTHERWISE SPECIFIED
1. ALL SIGNAL NAMES FOLLOWED BY AN ASTERISK ARE ACTIVE LOW.
2. ALL RESISTANCE VALUES ARE IN OHMS, 1/8W, 1%
3. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
4. ALL CAPACITORS ARE 50V, 10%
REF. DES.
LAST USED
NOT USED
SEE SHEET 1
CONFIDENTIAL
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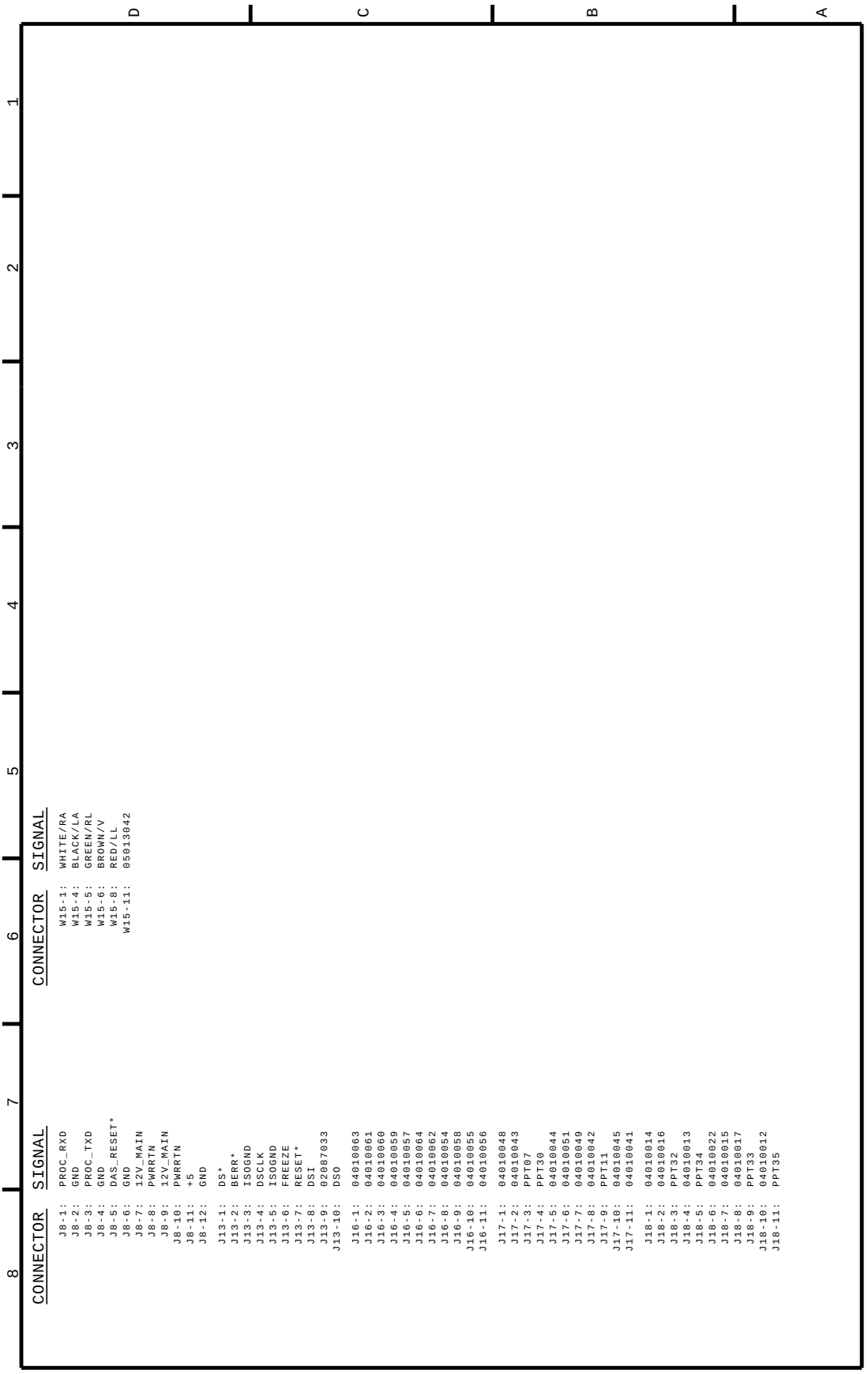
REV
ECO
DATE
APP'VD
see sh1
DRAWN BY: M.J. PALMER
DATE: 5-31-95
ENG. APPROVED: see sheet 1
MARQUETTE ELECTRONICS INC.
MONITORING DIVISION
TITLE: SCHEM DATA ACQ SYSTEM
PART NUMBER SD800776-001
REV B1
DIST M
SHEET 18 OF 19



CONNECTOR	SIGNAL
J8-1:	PROC_RXD
J8-2:	GND
J8-3:	PROC_TXD
J8-4:	GND
J8-5:	DAS_RESET*
J8-6:	GND
J8-7:	12V_MAIN
J8-8:	PWRRTN
J8-9:	12V_MAIN
J8-10:	PWRRTN
J8-11:	+5
J8-12:	GND
J13-1:	DS*
J13-2:	BERR*
J13-3:	ISOGND
J13-4:	DSCLK
J13-5:	ISOGND
J13-6:	FREEZE
J13-7:	RESET*
J13-8:	DSI
J13-9:	02087033
J13-10:	DSO
J16-1:	04010063
J16-2:	04010061
J16-3:	04010060
J16-4:	04010059
J16-5:	04010057
J16-6:	04010064
J16-7:	04010062
J16-8:	04010054
J16-9:	04010058
J16-10:	04010055
J16-11:	04010056
J17-1:	04010048
J17-2:	04010043
J17-3:	PPT07
J17-4:	PPT30
J17-5:	04010044
J17-6:	04010051
J17-7:	04010049
J17-8:	04010042
J17-9:	PPT11
J17-10:	04010045
J17-11:	04010041
J18-1:	04010014
J18-2:	04010016
J18-3:	PPT32
J18-4:	04010013
J18-5:	PPT34
J18-6:	04010022
J18-7:	04010015
J18-8:	04010017
J18-9:	PPT33
J18-10:	04010012
J18-11:	PPT35

CONNECTOR	SIGNAL
W15-1:	WHITE/RA
W15-4:	BLACK/LA
W15-5:	GREEN/RL
W15-6:	BROWN/V
W15-8:	RED/LL
W15-11:	05013042